

**THE UTILIZATION OF WILD ANIMALS IN  
MUBRI WARIORI VILLAGE, MANOKWARI WEST PAPUA****PEMANFAATAN SATWA LIAR DI KAMPUNG MUBRI WARIORI,  
MANOKWARI, PAPUA BARAT****Denisa Taran<sup>1\*</sup>, Saremay Sawaki<sup>2</sup>, Fransiskus Taran<sup>3</sup>, Robi Bomo<sup>4</sup>**<sup>1</sup>Department of Forestry, Faculty of Forestry, University of Papua.

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DOI: [10.47039/ish.4.2022.21-29](https://doi.org/10.47039/ish.4.2022.21-29)**Abstract**

The utilization of wild animals to meet human needs has existed throughout history. This study aims to identify the utilization of wild animals by in Mubri Wariori village, the trend of wild animals' utilization during the Covid-19 pandemic and the conservation programs that are applied to the wild animal populations by the hunters and the community in Mubri Wariori village. The data were collected through open interviews to seven respondents. The Snowball sampling technique was used to determine the respondents. The respondents are all the people who hunt wild animals in the village. The data was analysed descriptively. The result revealed that there are 13 species of wild animals that have been utilized by the hunters and the community in Mubri Wariori. The wild animal is mostly used for household consumption, sold for cash and other usages. This knowledge has been passed down from generation to generation. The respondents have a good understanding of the Covid-19 disease cause and the possibility of some diseases coming from their interaction with wild animals. During the Covid-19 pandemic, market demand for wild animals has increased. Thus, the respondents hunt more frequent, from once a week to five times a week. However, the respondents do not wear protective equipment such as gloves and mask in the process of handling wild animals. The ways that according to the respondents are effective in killing bacteria and viruses are by washing hands and boiling the wild animals' meat for a long time. Moreover, the respondents and the community has realized the importance of wild animals' conservation and has implemented conservation efforts for the bird of paradise and turtles.

**Keywords:** ethnozoology, vogelkop, covid-19 pandemic, public health**Inti Sari**

*Pemanfaatan satwa liar untuk memenuhi kebutuhan manusia telah ada sepanjang sejarah. Penelitian ini bertujuan untuk mengidentifikasi pemanfaatan satwa liar oleh para pemburu di Kampung Mubri Wariori, tren pemanfaatan satwa liar selama masa pandemi Covid-19 dan program konservasi yang telah diterapkan untuk menjaga kelestarian populasi satwa liar oleh para pemburu dan masyarakat di kampung Mubri Wariori. Data dikumpulkan melalui wawancara terbuka kepada responden. Teknik sampling snowball digunakan dalam penentuan responden. Responden adalah semua orang yang melakukan kegiatan perburuan satwa liar di kampung tersebut. Data yang telah dikumpulkan dianalisis secara deskriptif. Hasil wawancara menunjukkan bahwa ada 13 spesies satwa liar yang dimanfaatkan oleh para pemburu di kampung Mubri Wariori. Pemanfaatan yang*

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*paling banyak dijumpai adalah sebagai sumber pangan, diikuti dengan sebagai sumber pendapatan rumah tangga, pengobatan dan dekorasi rumah. Pengetahuan ini diwariskan secara turun-temurun. Para responden memiliki pemahaman yang baik terkait penyebab penyakit Covid-19 dan kemungkinan terjadinya penularan penyakit dari satwa liar sebagai dampak interaksinya dengan satwa liar. Selama pandemi Covid-19, permintaan pasar terhadap satwa liar semakin meningkat. Para responden bahkan lebih sering pergi berburu, dari satu kali per minggu menjadi lima kali per minggu. Namun demikian, responden tidak menggunakan alat pengaman seperti sarung tangan dan masker selama proses penanganan satwa liar. Cara yang efektif membunuh bakteri dan virus menurut para responden adalah dengan mencuci tangan dan dididihkan daging satwa liar dalam waktu yang lama. Para responden dan masyarakat Mubri Wariori juga telah menyadari pentingnya konservasi satwa liar dan telah memberlakukan program konservasi bagi burung cenderawasih dan penyu.*

**Kata Kunci:** etnozoologi, vogelkop, pandemi covid-19, kesehatan masyarakat

## I. INTRODUCTION

The utilization of wild animals can be defined as the process of managing and using all wild animals for the purpose that has been set. The utilization of wild animals to meet human needs has existed throughout history and has been passed down from generation to generation. This is mainly carried out by people living around forests and coastal areas (Selier & Di Minin, 2015). Wild animals and their interactions with humans are the subject matter of ethnozoology. This utilization of wild animals is diverse and has developed based on the wisdom of each ethnicity and community (Alves, 2012). One wild animal species can be used in different ways and for different purposes by different communities. Wild animals can be used for a range of purposes such as food, medication, household economic resources, research, pet, traditional custom, traditional rituals, jewelry and symbols (Albuquerque et al., 2013; D’Cruze et al., 2020).

Many Papuans are categorized as the collector of forest products, which means that they continuously make use of forest products to meet their daily needs (Saleh, 2021). This relationship between the community and nature can be measured by calculating the number of

wild animals used. The more the utilization, the more it shows a close relationship (Dickman, 2010). Research related to ethnozoological studies conducted by Budiman and Christian (2019) in the coastal area of Tomu district, which is part of Teluk Bintuni Regency in West Papua province, discovered 15 species of wild animals that are used as food, medicine and pets.

Republic of Indonesia Government Regulation Number 8 in 1990 on the utilization of plants and wild animals stated that wild animals are part of the natural resources that can be used for the community prosperity by taking into account the community, the continuity of the potential of these resources, the carrying capacity and the wild animals’ diversity. Wild animals that can be used are those that are not protected by the government regulations. The government will also set a quota for the collection and capture of each wild animal species that can be harvested every year. There will be sanctions that have been set, if it is not carried out according to these regulations.

It is essential to conduct research about the utilization of wild animals. It records communal intellectual knowledge regarding the socio-cultural interactions between the community and the natural resources in meeting their daily needs and investigates the community’s dependence on the wild animals that are utilized. In addition, this information is also important for the government as basic information for determining wild animal conservation programs, so the wild animals and their utilization are sustained.

Mubri Wariori village is located in the North Manokwari district. This village is situated in the coastal area and directly adjacent to a tropical lowland forest. Based on the initial survey, it is known that the community utilizes wild animals from the sea, forest and air to meet their daily needs. However, publications related to wild animals’ utilization in this region are still limited. Therefore, this study aims to identify the utilization of wild animals by hunters in Mubri Wariori Village, to identify the trend of wild animals’ utilization during the Covid-19 pandemic and to identify the conservation effort that is applied for the conservation of wild animal populations by the hunters and the community.

## II. METHOD

### A. Study Site

This research was conducted in Mubri Wariori Village, North Manokwari District, Manokwari Regency, West Papua Province, Indonesia (Figure 1). The national code of the village is Code 92.02.14.2003. The previous name of the village is only Mubri but then the community changed it to Mubri Wariori. The total population of Mubri Wariori Village is 243 people, which is consist of 115 families. The community is multicultural. The dominant tribe is Meyakh tribe, which is one of the native tribes in Arfak mountain. The other minority groups are from other areas in Papua (Serui, Biak, Wondama), Sulawesi, Java and Sumatera. The occupations of the Mubri Wariori community are farming, fishing, hunting and civil servant. This village is also one of the villages selected to participate in a program named *Transformasi Ekonomi Kampung Terpadu* (Tekad) implemented by the Ministry of Villages, Development of undeveloped Regions, and Transmigration. This program is

implemented to improve the socio-economic sector of the community in the village. Mubri Wariori Village can be reached by using two-wheeled or four-wheeled vehicles for  $\pm 2$  hours drive from the city centre of Manokwari.

### B. Data Analysis

The study was carried out for three weeks, 23<sup>rd</sup> October – 13<sup>rd</sup> November, 2021. It consists of an initial survey and data collection. The initial survey was performed to determine the location of the study site and the research administration process to the district and the village. Data were collected through open interview based on the questionnaire. Determination of respondents is performed by using the snowball sampling technique. The respondents were seven people. They are all hunters in the Mubri Wariori village. They are adult males with a range of age 38-50 years old. The data was analysed descriptively and presented in tables and figures. Visual observation of the wild animals utilized cannot be performed. Therefore, the wild animals utilized was identified based on the pictures and local name of the species provided by the



Figure 1. Location of Mubri Wariori Village, North Manokwari District, Manokwari Regency, West Papua, Indonesia

respondents. A contextual approach was used to illustrate the situation in the field.

### III. RESULT AND DISCUSSION

#### A. The Utilization of Wild Animals

Knowledge about the utilization of wild animals can be obtained from various sources, such as ancestors passed down generation to generation, life experiences and interactions with other tribes (Alves and Souto, 2011). The interviews revealed that the hunters acquire knowledge regarding the use of wild animals, generally from their parents. All the wild animals caught by the hunters are wild animals that were caught and used by their parents. Moreover, they also pass the knowledge to their children by inviting sons who are over 15 years old to hunt and teaching daughters to process the catches. It is also known that there is new knowledge as the result of interactions with another tribe. The existence of development, a national transmigration programs and the formation of new villages have caused the communities who inhabit the North Manokwari district not only indigenous Manokwari' tribes, but also various tribes from other Papua regions and outside Papua. This is resulting in an exchange of knowledge.

Mubri Wariori Village is one of the villages located in the Bird's Head Peninsula or also known as Vogelkop. People who live for generations in this area have known the potential of wild animals to meet their daily needs. The communities obtain wild animals by hunting. Thus, hunting becomes one of the activities inherent in the traditions of the Papuan, including in the Meyakh Tribe, which is a forest-dwelling. The community in this tribe live communally and depend on the nature to fulfil their needs by hunting wild animals (Ullo & Marsono, 2013). However, over time, hunting is no longer the main way for people to obtain wild animals. It can be seen from this study, which is out of 115 families, only seven families carried out wild animals hunting. The other community obtained wild animals indirectly by purchasing from the hunters. The existence of other occupation options and the proliferation of community livestock businesses are factors that reduce hunting activity.

The interviews revealed that there were

13 species of wild animals that generally were obtained and utilized by the hunters and the Mubri Wariori community. The species of wild animals and their use are presented in Table 1. The hunters always try to catch them every time they go hunt. The catches always vary, ranging from six to seven species per time they hunt. The wild animal that is the main target for hunters is the wild boar (*Sus scrofa*) because the hunters like to consume the meat and there are plenty of buyers for this animal.

The most widely used wild animals is from the Mammal, consisting of six species. The wild animals from these taxa are generally larger in size so that people can get more protein. Other wild animals are members of the Reptile and Aves. Apart from turtles that can only be obtained during the spawning season, other wild animals from these taxa are not migratory animals so they can be found in the forest. The hunters also pointed out that of all wild animals caught, birds are the most diverse and provide a variety of tastes in the diet. They admit that the diversity of birds in the north Manokwari District forest is very high. Several species of birds were not included in the result of this study because the respondents only described the animal without any photos so the identification process was difficult to do.

#### B. The Purpose of Utilizing Wild Animals

Interviews revealed that the respondents utilized wild animals generally for household consumption. This result is similar to the research conducted by Pattiselanno (2003) about the wildlife value, in which the most common form of wild animals' utilization in West Papua communities is for household consumption. Wild animals' meat is a source of protein for humans' body. These respondents consume wild animals' meat almost every day. They usually store the meat by smoking it. The wives and the daughters will process and trade the catches. They have a wide variety of wild animals' meat to consume compare to farm meat. Thus, the respondents prefer to hunt wild animals rather than purchase farm meat.

The respondents stated that they will trade the wild animals if the family consumption needs has been fulfilled. Mubri Wariori community obtained the wild animals by purchasing directly from the respondents. Each respondent

has their own customers around the village so that they know where to sell their catches. The community usually purchased around two species of wild animals in every transaction. The demand for this animal does not only come from the Mubri Wariori community but also the surrounding villages and the city. If the catches were not sold out around the village, the hunters will also trade them to the market in Manokwari City, such as Amban, Borobudur and Sanggeng. Meanwhile, *R. timorensis* and *S. scrofa* have consumers from the city who are ready to purchase anytime. The wild animal that is most in demand is the wild boar as the stock of this animal was always sold out.

Two species of wild animals are used as medicine. Turtle eggs are consumed raw as medicine for asthma disease. People have to consume the eggs that have just been released because they believe the eggs have not been contaminated by bacteria and viruses. However, the hunters have to wait until the turtles' spawning season. Meanwhile, home decoration is the least form of wild animals' use. It is deer horn that is used as wall decoration. The respondents just dry the horn in the sun for several days and hang it on the wall. The use of wild animals for customary needs and the pet was not found in this study.

### C. Public Health Concern in the Utilization of Wild Animals

The utilization of wild animals to fulfill daily needs is not only has a positive impact but also a negative impact. One of the negative impacts is the spread of diseases from wild animal to human or known as zoonoses (Brown, 2004). More than 70% of zoonotic infectious diseases are transmitted through direct interaction with wild animals such as consumption of meat containing pathogens and improper handling of wild animals (Sikatta & Adisasmito, 2020). For example, the coronavirus that causes Covid-19 disease is thought to have originated from wild animals, including birds and bats. The wild animal trade in China has even been temporarily closed because it is suspected that the spread of the coronavirus was from the consumption of wild animals contaminated with the virus (Vyawahare, 2020).

The Covid-19 pandemic has lasted from 2020 to the present. There are many government' programs to minimize the spread of the disease and the impact on the community. In the Mubri Wariori Village, there is an isolation room organized by the leader of the village and the nearest public health care for the Covid-19 disease patients. The respondents have a good understanding of the Covid-19

**Table 1.**  
The species of wild animals and their utilization

Local Name	Scientific Name	Taxa	Form of Utilisation					
			C	T	M	HD	CN	P
Rusa	<i>Rusa timorensis</i>	Mammal	√	√		√		
Babi Hutan	<i>Sus scrofa</i>	Mammal	√	√				
Tikus Tanah	<i>Echymipera spp.</i>	Mammal	√					
Kuskus	<i>Spilocuscus maculatus</i>	Mammal	√	√				
Kuskus	<i>Phalanger orientalis</i>	Mammal	√	√				
Kelelawar	<i>Dobsonia minor</i>	Mammal	√	√				
Biawak	<i>Varanus spp.</i>	Reptile	√					
Ular pohon	<i>Morelia viridis</i>	Reptile		√				
Penyu	<i>Chelonia mydas</i>	Reptile	√	√	√			
Penyu	<i>Eretmochelys imbricata</i>	Reptile	√	√	√			
Burung kumkum	<i>Ducula pinon</i>	Aves	√					
Burung taon-taon	<i>Rhyticeros plicatus</i>	Aves	√					
Burung Nuri	<i>Electus roratus</i>	Aves		√				

**Note:** C: Consumption; T: Trade; M: Medication; HD: Home Decoration; CN: Customary needs; P: Pet



**Figure 2.** Several Wild animals used (a) *C. timorensis*, (b) *P. orientalis*, *Echymipera* spp. and *M. viridis*, (c) *S. scrofa*, (d) *R. plicatus*, (e) *S. maculatus*

pandemic causes and the way of transmission from human to human. They understand that there is a possibility of some diseases coming from their interaction with wild animals. However, they still utilize wild animals that are hunted with minimum protection.

The interviews revealed that during this pandemic, the utilization of wild animals experiences a significant increase. The respondents even increased their hunting activity. Before the pandemic, they only hunted once a week, while, it was carried out five times a week after the pandemic. This is because the high demand for wild animals in the village and the city. Besides that, due to the policy of restricting community activities implemented by the West Papua Provincial Government, the respondents who remain at home prefer to hunt. Moreover, the respondents stated that they do not worry about this pandemic as the number of Covid-19 cases in Mubri Wariori Village is low. There are only three cases reported by Health Department of Manokwari Regency in 2021. They also argued that the wild animals in their forest are healthy from the corona virus or other dangerous bacteria and viruses so that they can utilize them safely. The respondents

do not have special protective equipment in the process of handling wild animals. They do not wear masks and gloves. All processes from hunting to processing and trading the catches were carried out with their bare hands. The effective ways by respondents to killing bacteria and viruses are by washing hands and boiling the wild animals' meat for a long time. Before the Covid-19 pandemic, respondents have also been aware of the possibility of bacteria and viruses that cause disease in wild animals that can spread to humans. However, it was only minor illnesses such as headache, diarrhoea and itchy skin that can be easily cured by using traditional medicine that is planted in their garden.

Based on the research, wild animals have been known to be hosts for various bacterium, viruses and parasites which are one of the health problems that are disturbing in Indonesia (Wolfe et al., 2005). For example, the wild boar, which is the wild animal that is the most consumed and has the highest market demand, is also a host for parasites that can cause zoonoses. The wild boar is the host of the *Taenia solium* which is a worm species that causes Taeniasis and cysticercosis (Bakri &

Balqis, 2018). Suroso et al., (2006) and Wandra et al., (2006) reported that Papua has the highest incidence of taeniasis and cysticercosis in Indonesia due to the lifestyle of unhygienic habits and inadequate sanitation facilities. The worms will infect and damage the skin, muscles, eyes, and brain tissue (Widarso et al., 2001; Yulianto et al., 2015). In addition, Sambodo & Tethool (2012) found that seven Bandikut (*Echymipera kalubu*) obtained from the forest in Manokwari had helminths (worms) and were zoonotic or could be transmitted to humans. Other wild animals must also be hosts for various parasites, bacteria and viruses that harm the community who utilized them. Thus, the Knowledge of proper handling of wild animals is needed to prevent the spread of diseases.

#### **D. The Conservation of Wild Animals Utilized**

The conservation of wild animals is the practice of protecting wild animals and their habitats by individuals, communities, tribes, non-governmental organizations and governmental institutions. The utilization of wild animals is one of the threats to the existence of wild animals because excessive use can cause a decline in animal populations (Luxmoore, 1989). Currently, the publications that examine the demographics and the population growth of wild animals used in the North Manokwari District have few appearances. In addition to this, information from respondents that it is increasingly arduous to find wild animals can be an important note that these wild animal species have decreased in population and/or moved because their habitat is disturbed. Therefore, the protection of wild animals used must also be enforced from now on.

The respondents and the Mubri Wariori community have a good understanding of wild animals' conservation. They realize that the existence and preservation of wild animals are vital for them and their children and grandchildren to fulfil their daily needs. This is also socialized and supported by the Department of Maritime Affairs and Fisheries of West Papua Province. The respondents are increasingly aware of the importance of wild animals' conservation also because it is increasingly hard to obtain the wild animals. The community of Mubri Wariori have imposed

bans and restrictions on hunting for two species as part of the village conservation program in the last five years. The two species are the bird of Paradise (*P. apoda*) and Turtles (*C. mydas* and *E. imbricata*). Despite having a high economic value, the bird of Paradise has been banned from hunting and trading in Mubri Wariori Village and throughout the North Manokwari District because the community has realized that this bird is an endemic bird of Papua that must be protected. Besides that conservation efforts for turtles have also been implemented, this is by only taking the animal from one phase of growth, namely if they take the adult, the eggs will be left and given a wooden fence as a sign so that other people do not take them. If they take eggs, the adult is released and not all eggs are taken and will still be marked with a wooden fence. This conservation program has no strict control. There is no daily monitoring of the wild animals' utilization from the leader of the village and the government, so it depends on community awareness.

In utilizing wild animals, the community also has to follow the regulation set up by the government that aims to achieve sustainable use. Based on the regulation of the minister of Environmental and Forestry of the Republic of Indonesia Number P.20/MENLHK/SETJEN/KUM.1/6/2018, seven protected species have been utilized by the hunters and the community in Mubri Wariori. They are *R. timorensis*, *S. maculatus*, *Varanus* spp., *C. mydas*, *E. imbricata*, *M. viridis* and *E. roratus*. In the regulation, it is explained that everyone is prohibited from catching, injuring, killing, keeping, raising, transporting and trading protected animals. They can only utilize unprotected wild animals. Thus, it can be seen that the participation of local communities in the implementation of conservation programs is very significant. The government needs to cooperate with the local community. The government must take a direct approach to those who harvest wild animals and there must be a balanced compensation because the community use wild animals for fulfilling their daily needs.

#### **IV. CONCLUSION**

There are 13 species of wild animals utilized by the hunter mainly for household consumption. Other form of utilization was for trading, medicine and home decoration. The

13 wild animal species are *Rusa timorensis*, *Sus scrofa*, *Echymipera* spp., *Spilococcus maculatus*, *Phalanger orientalis*, *Dobsonia minor*, *Varanus* spp., *Morelia viridis*, *Chelonia mydas*, *Eretmochelys imbricata*, *Ducula pinon*, *Rhyticeros plicatus* and *Eclectus roratus*. Moreover, during the Covid-19 pandemic, the hunters and the community utilized more wild animals. The hunters even have to increase the frequency of hunting wild animals from once a week to five times a week to fulfill the market demand. Furthermore, the hunters and the community have been realized the importance of conserving wild animals. They have been implemented conservation program for bird of paradise and turtles.

Based on research finding, there are five recommendations. First, a field observation is needed to determine the diversity of birds that has been utilized by the community in Mubri Wariori. Second, a complete data collection on protein sources in fulfilling community nutrition is also needed to be documented to find new food sources in national food security. Third, the government need to socialize the regulations related to hunting of wild animals and the utilization of wild animals to maximize the implementation of conservation efforts by the community and the hunters. Furthermore, the government through related department can provide assistance in the form of providing livestock to the community in order to reduce hunting pressure on the existing wild animal populations. Fourth, public health investigation to the community who utilizes the wild animal is essential to be conducted to eliminate a potential impact of disease transmission from wild animals to human and human to human. Fifth, it is necessary to inspect the meat of wild animals that are traded in the market to prevent disease transmission from wild animals to humans from the Food and Drug Administration of West Papua Province.

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