

**STRATEGY AND ACTION PLAN FOR
CONSERVATION OF ANOA
(*BUBALUS DEPRESSICORNIS* AND *BUBALUS QUARLESII*)
2013 - 2022**



2013

Strategy and Action Plan for Conservation of Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*)

2013 - 2022

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**MINISTER OF FORESTRY
REPUBLIC OF INDONESIA**

**REGULATION OF THE MINISTER OF FORESTRY OF THE REPUBLIC
OF INDONESIA**

Number: P.54/Menhut-II/2013

ON

**THE STRATEGY AND ACTION PLAN FOR ANOA (*BUBALUS
DEPRESSICORNIS* AND *BUBALUS QUARLESII*) CONSERVATION
2013 - 2022**

**IN THE NAME OF ALMIGHTY GOD
MINISTER OF FORESTRY OF THE REPUBLIC OF INDONESIA,**

Considering :

- a. That in order to improve conservation of Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) and its habitat, it is necessary to have a national anoa conservation strategy and action plan. This plan will function as a framework for the handling of conservation priorities in an integrated management approach, involving all the relevant parties and stakeholders;
- b. That based on the consideration as referred to in paragraph 'a,' it is necessary to stipulate a Forestry Ministerial Regulation concerning the Conservation Strategy and Action Plan for Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) for period 2013-2022;

In view of :

1. Law No. 5 of 1990 on the Conservation of Living Natural Resources and its Ecosystems which are a part of it (State Gazette of the Republic of Indonesia Number 49 of 1990, Supplement to the State Gazette of the Republic of Indonesia Number 3419);
2. Law No. 5 of 1994 on the Ratification of the United Nations Convention on Biological Diversity (State Gazette of the Republic of Indonesia Number 41 of 1994, Supplement to the State Gazette of the Republic of Indonesia Number 3556);
3. Law No. 41 of 1999 on Forestry (State Gazette of the Republic of Indonesia Number 167 of 1999, Supplement to the State Gazette of the Republic of Indonesia Number 3888) as amended by Law No, 19 of 2004 (State Gazette of the Republic of Indonesia Number 86 of 2004, Supplement to the State Gazette of the Republic of Indonesia Number 4412);
4. Law No. 32 of 2004 on the Regional Governments (State Gazette of the Republic of Indonesia Number 125 of 2004, Supplement to the State Gazette of the Republic of Indonesia Number 4437) as amended several times, with the last change made through Law No. 12 of 2008, concerning Regional Governments (State Gazette of the Republic of Indonesia Number 59, Supplement to the State Gazette of the Republic of Indonesia Number 4844);
5. Law No. 32 of 2009 on Environmental Protection and Management (State Gazette of the Republic of Indonesia Number 140, Supplement to the State Gazette of the Republic of Indonesia Number 5059);
6. Law Number 18 of 2009 on Animal Husbandry and Animal Health (State Gazette of the Republic of Indonesia Number 84, Supplement to the State Gazette of the Republic of Indonesia Number 5015);

7. Government Regulation No. 7 of 1999 on the Preservation of Flora and Fauna Species (State Gazette of the Republic of Indonesia Number 14 of 1999, Supplement to the State Gazette of the Republic of Indonesia Number 3803);
8. Government Regulation Number 8 of 1999 on the exploitation of Wild Flora and Fauna Species (State Gazette of the Republic of Indonesia Number 15 of 1999, Supplement to the State Gazette of the Republic of Indonesia Number 3802);
9. Government Regulation Number 45 of 2004 on Forest Protection (State Gazette of the Republic of Indonesia Number 147 of 2004, Supplement to the State Gazette of the Republic of Indonesia Number 4453) as amended by Government Regulation No. 60 of 2009, concerning Forest Protection (State Gazette of the Republic of Indonesia Number 137, Supplement to the State Gazette of the Republic of Indonesia Number 5056);
10. Government Regulation No. 6 of 2007 as amended by Government Regulation No. 3 of 2008 on Forest Designing and Forest Management Planning, also Forest Use (State Gazette of the Republic of Indonesia Number 16 of 2008, Supplement to the State Gazette of the Republic of Indonesia Number 4814);
11. Government Regulation No. 36 of 2010 on Nature Tourism Concession Wildlife Reserves, National Parks, Grand Forest Parks and Nature Tourism Parks (State Gazette of the Republic of Indonesia Number 44 of 2010, Supplement to the State Gazette of the Republic of Indonesia Number 5116);
12. Government Regulation No. 28 of 2011 on the Management of Forest Reserves Areas and Nature Conservation Areas (State Gazette of the Republic of Indonesia Number 56 of 2011, Supplement to the State Gazette of the Republic of Indonesia Number 5217);

13. Presidential Decree No. 43 of 1978 on CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora);
14. Minister of Forestry Decree No. 355/Kpts-II/2003 on the Identification of Wild Plant and Animal Specimens;
15. Minister of Forestry Decree No. 447/Kpts-II/2003 on the Administration Directive for Collecting, Capturing and Distribution of Wild Plant and Animal Specimens;
16. Minister of Forestry Regulation No. P.57/Menhut-II/2008 on Strategic Direction of the National Species Conservation 2008-2018;
17. Minister of Forestry Regulation No. P.40/Menhut-II/2010 on the Structure and Organization of the Ministry of Forestry (State Gazette of the Republic of Indonesia Number 405 of 2010) as amended by Minister of Forestry Regulation No. P.33/Menhut-II/2012 (State Gazette of the Republic of Indonesia Number 779 of 2012);

HAS DECIDED:

To stipulate :

MINISTER OF FORESTRY REGULATION ON STRATEGY AND ACTION PLAN FOR ANOA (*BUBALUS DEPRESSICORNIS* AND *BUBALUS QUARLESI*) CONSERVATION 2013-2022.

Article 1

The Strategy and Action Plan for Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) Conservation 2013-2022, as mentioned in the attachment is an integral part of this regulation.

Article 2

The Strategy and Action Plan for Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) Conservation, 2013-2022 as referred to in Article 1 is a framework for the arrangement of anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) conservation programs.

Article 3

This Minister of Forestry Regulation shall come into force on the date of promulgation.

This Forestry Ministerial Regulation will be promulgated with its placement in the official State Report of the Republic of Indonesia, so that each person be aware of the regulation.

Stipulated in Jakarta
on 30 October 2013
MINISTER OF FORESTRY
REPUBLIC OF INDONESIA,
Signed
ZULKIFLI HASAN

Enacted in Jakarta
on 4 November 2013
MINISTER OF LAW AND HUMAN RIGHTS
REPUBLIC OF INDONESIA,
Signed
AMIR SYAMSUDIN

STATE REPORT OF THE REPUBLIC OF INDONESIA NUMBER 1281 OF 2013

Certified to be a true copy of the original
HEAD OF LEGAL AND ORGANIZATION BUREAU
Signed
KRISNA RYA

**Annex: Forestry Ministerial Regulation of the Republic of Indonesia
Number: P.54/Menhut-II/2013**

**STRATEGY AND ACTION PLAN FOR ANOA
(*BUBALUS DEPRESSICORNIS* AND *BUBALUS
QUARLESII*) CONSERVATION
YEAR 2010-2020**

CHAPTER I INTRODUCTION

A. Background

The Anoa are the smallest members of the buffalo genus *Bubalus*. However, some have considered it to be a species of forest cattle or a type of Sulawesi dwarf cattle, as it is morphologically more similar to cattle than buffalo. Anoa are endemic to Sulawesi Island and Buton Island. Its name is intricately linked to Sulawesi Island, which is in the biodiversity hotspots of the Wallacea region, an important region for biodiversity conservation. Anoa have become animal mascots and flagship species for conservation in Sulawesi. With this status, anoa function as ambassadors that promote Sulawesi to the national and international public. It is therefore appropriate for the government and people of Sulawesi to be proud of the natural heritage anoa represent, and give more concern to the conservation of endemic fauna. Historically, anoa distribution covered the entire island of Sulawesi and the island of Buton. However, this rare animal has now disappeared from the southern peninsula of Sulawesi and the eastern most parts of the northern peninsula (Burton et.al., 2005). Anoa do not occur on several of the small islands surrounding Sulawesi such as the Togian Islands, Banggai Islands, Wawonii Island, Muna Island, Kabaena Island and Tukang Besi Islands (Wangi-Wangi, Kaledupa, Tomia and Binongko), (Mustari, 1995, 2003).

Anoa are threatened by poaching and habitat decline and fragmentation. Anoa are hunted for trade and meat consumption, and the horns become hunting trophies. Habitat decrease is caused by the conversion of forests to other forms of utilization and the resulting decrease in habitat carrying capacity causes the anoa populations to be in continuous decline.

In Indonesia, anoa have been protected by law since 1931. At the international level, anoa are categorized as an Endangered Species on

the IUCN Red List; this means that it is threatened by extinction if no measures are taken to conserve its habitat and populations. The species is also included in Appendix I of CITES. The Indonesian law and CITES mean that it may not be hunted, killed and traded, alive or dead, in whole or parts.

Therefore population and habitat management, as well as active stakeholder participation are needed to protect anoa from the threat of extinction. Moreover, policy support is required to protect anoa populations and their habitat. Next to this accurate data and information is needed on the condition of anoa populations and habitat on all of Sulawesi Island and Buton Island.

In an effort to conserve anoa, an international workshop called "Population and Habitat Viability Assessment" (PHVA) was held in July 1996 at Taman Safari I Cisarua Bogor. The aim was to formulate policy and recommendations for the conservation of anoa within (in-situ) and outside (ex-situ) of their natural habitat (Manansang et.al., 1996). The resulting recommendations could be categorized into three strategic issues, namely the management of anoa in their natural habitat, the management of anoa in captivity and conservation institutions (ex-situ) and a population model of anoa to estimate future populations under various scenarios.

However, these efforts have not been too successful. Therefore the targets and phases to save anoa have to be adjusted to become more concrete and effective. Ideally species management is based on a systematic planning document and its success measured by target indicators, which facilitate the monitoring and evaluation of implementation efforts. Therefore the compilation of a strategy and action plan for anoa conservation has become a priority and is considered a strategic item that can serve as a national document to be used by multiple parties.

In May 2009 a national workshop was organized in Manado to discuss the Strategy and Action Plan for Anoa and Babirusa Conservation. The

workshop lasted for two days and was coordinated by by Ditjen PHKA – Ministry of Forestry, in cooperation with the IUCN-SSC Asian Wild Cattle Specialist Group. The workshop was attended by approximately 60 participants from various parties and aimed to to reach the following objectives: 1). to collect information on the status and distribution of anoa and babirusa in Sulawesi which can be used in conservation planning; and 2). to prepare the National Strategy and Action Plan for Anoa Conservation 2013-2022 (and babirusa in a separate document).

The workshop recommended that there was an urgent need for a compilation of the latest information on anoa and babirusa population status and distribution, as well as stressing the need for involvement of multiple parties and the identification of threats and challenges in developing a conservation strategy and action plan.

B. Aim and Objective

The aim of the production of this Strategy and Action Plan for Anoa Conservation 2013-2022 is to give direction to policies and act as a reference for developmental stakeholders, national and regional governments, conservationists, universities, research institutions, business entities, non-governmental organizations, local communities, financial backers and mass media at the regional, national and international levels.

The objective of the Strategy and Action Plan for the Anoa Conservation 2013-2022 is stabilizing the anoa population until 2022 and maintaining habitat carrying capacity through the efficient and effective implementation of conservation programs involving multiple parties.

C. Scope

The scope of the Strategy and Action Plan for Anoa Conservation 2013-2022 includes controlling poaching and trade, population management, habitat development, controlling deforestation and the degradation of anoa habitat and involving society in anoa conservation efforts.

D. Definition

The definitions of the terms used in this Strategy and Action Plan for Anoa Conservation are as follows:

1. In-situ are conservation efforts undertaken within the natural habitat of a species.
2. Ex-situ are conservation efforts undertaken outside of the natural habitat of a species.
3. Habitat is the environment that enables plants or animals to live, breed and develop naturally.
4. Inbreeding is the mating of closely related individuals.
5. Conservation institutions are institutions active in the conservation of plants and or animals outside of their natural habitat (ex-situ) and can be both governmental and non-governmental.
6. A Zoo is a place or organization functioning mainly as a conservation institution that nurtures and breeds various kinds of animals based on ethical conduct and welfare principles in order to form and develop new habitat, to protect and conserve species through rescue, rehabilitation and reintroduction and to facilitate education, research and the development of science and technology and healthy recreation.
7. Minimum Viable Population (MVP) is the minimum number of individuals required in a population to maintain at least 90% of genetic variation over a period of 100 years and onwards.
8. A Population is a group of individuals of a certain species that live and interact in the same place and can produce viable offspring. In the long term the population sizes reaches an equilibrium depending on the condition of the habitat and general environment.
9. The IUCN Red List is a list that categorizes the threat of extinction faced by species and is issued by a global conservation agency (International Union for Conservation of Nature/IUCN).

10. A Studbook is a book containing a list of all individuals of a species in conservation institutions as well as containing information on the status, condition and ancestry of these individuals.

CHAPTER II

CURRENT CONDITION

A. Biology

Knowledge of the taxonomy and population structure of anoa are required to conserve their populations and habitat. However, both of these remain uncertain (Groves 1969; Honacki et.al., 1982; Wilson & Reeder 1993, Sugiri & Hidayat 1996. Shreiber et.al., 1999 and Burton et.al., in prep.). The anoa taxonomy currently used was originally proposed by Groves (1969) and recognizes two species of anoa, namely the lowland anoa (*Bubalus depressicornis*) and the mountain anoa (*Bubalus quarlesi*). There are variations in anoa morphology between different regions in Sulawesi as can be seen in Image 1.



a. Ragunan Zoo



b. Palu

c. Luwu Timur

Image 1. Variation in anoa morphology (Photos: Mustari)

Research performed by Burton et.al. (in prep.) showed that based on genetic variation there are at least four subpopulations of anoa found on Sulawesi Island and Buton Island. (Image 2). The subpopulations are located in the northern, central and southeastern parts of Sulawesi Island and there is a single subpopulation on Buton Island. However, very little information is known on the genetics of the anoa population in the southern part of Sulawesi due to a lack of data. In population management, genetic variation observed in different geographical areas (longitudinal) and in areas with different altitudes (altitudinal) becomes an important consideration for determining priority areas to protect anoa populations, and it forms the basis of this Strategy and Action Plan for Anoa Conservation 2013-2022.

Box 1: Taxonomy and population structure

The morphological differences between lowland anoa and mountain anoa are described in Groves (1969) and Burton et.al. (2005). The distribution of the two anoa species in Sulawesi has been described by Burton et.al. (2005). Mountain anoa are generally found 1,000 m above sea level, and lowland anoa inhabit forest areas lower than 1,000 m above sea level. However, both species are often observed to live sympatrically in the same habitat (Mustari, 2003). Due to this uncertainty in distribution, it is difficult to select representative populations for both species. Therefore the differences in genetic variation in anoa, which show there are at least four subpopulations (Burton, et.al., in prep.), as well as the differences in subspecies occurrence based on the altitude of habitat, become the basis for determining priority conservation areas in the Strategy and Action Plan for Anoa Conservation 2012-2021.

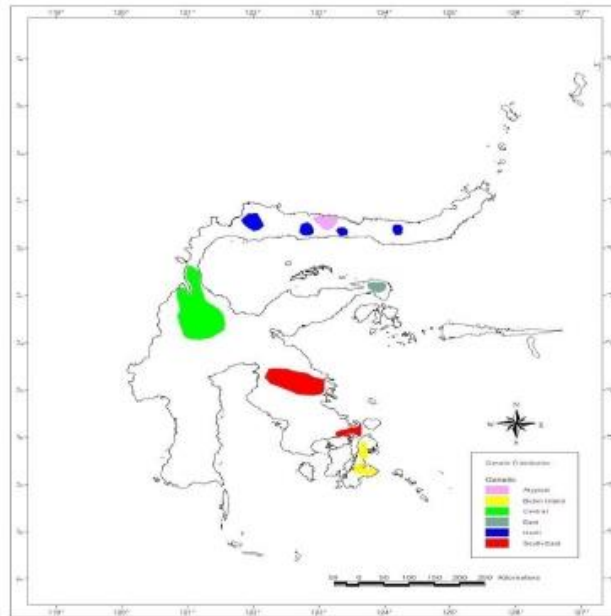


Image 2. Genetic and morphometric diversity of anoa in various regions in Sulawesi (Burton et.al., in prep.)

Anoa are solitary animals; they are generally observed alone or in groups of two, consisting of a male and female adult in the mating season, or a female and her young. Anoa are difficult to domesticate, even if they have been held in captivity for several years. Anoa are more aggressive during the mating season or when nursing young (Mustari, 1995, 2003).

Anoa are a species of wildlife that is relatively difficult to breed because it only gives birth to 1 individual per birth and has a nine month gestation period. The time between pregnancies is at least 2 years. Females reach sexual maturity at the age of 3 and males at the age of 4. Although it has not been scientifically proven, several ex-situ records suggest that the productive period of anoa reaches 20 years.

B. Population, Habitat and Distribution

1. Population

There is still very limited data on population densities of anoa in their habitat, which makes it difficult to accurately estimate the size of the population. Data on anoa populations is only available in some conservation areas, including Tanjung Amolengo Wildlife Preserve (604 hectares area) with a population density of 1.3 – 2.0 anoa/km² and a total population of 8 – 12 lowland anoas (Mustari, 1995); In Tanjung Peropa Wildlife Preserve (38,927 hectares), the anoa density is 0.9 individuals/km², with a total estimated population size of 350 individuals (Mustari, 2003) and Lambusango Wildlife Preserve (27,700 hectares) on Buton Island, has an estimated anoa population density of 0.25 – 0.33 anoas/km² and an estimated total population size of 150 – 200 anoas (Wheeler, unpublished report, 2006). By using data to estimate the minimum densities of anoa, that is 0.25 – 0.33 individuals/km², it is estimated that the total anoa population in Sulawesi numbers less than 5,000 individuals (IUCN Red List, 2009).

Poaching, increasing deforestation rates and habitat fragmentation have caused the anoa population to decrease. In order to maintain genetic variation in spite of the many threats, including environmental changes, a substantial population size is required. Because small and fragmented populations have a high risk of reduced genetic variation, they are vulnerable to extinction. Moreover, small populations also face a higher possibility of extinction following an epidemic or a natural disaster.

In order to maintain the genetic variation of a population, a Minimum Viable Population (MVP) size is required. The MVP for mammals is estimated at around 5,000 adult individuals (Franklin & Frankham, 1998, Traill et.al., 2007).

Box 2: Population and genetic management

The Minimum Viable Population (MVP) is defined as the “minimum amount of individuals required in a population or species in order to survive over a sufficiently long period of time” (Schaffer, 1981). In order to maintain genetic diversity at a minimum level of 90% over 100 years, at least 5,000 adult individuals are required (Traill et.al., 2007). With this number it is expected that a population or species may: a). adapt/evolve, and b). have potential as a useful genetic resource for human interests.

It is estimated that there currently are no regions in Sulawesi with 5,000 adult individuals. Therefore the population management concept of “metapopulation” needs to be applied, meaning that individual populations spread over different areas need to be managed as a single population, so that smaller and fragmented individual populations can be expected to maintain their genetic variation. Metapopulation management includes: a). Keeping fragmented populations from going extinct b). Keeping important genetic stock from going extinct, and c). Safeguarding gene flow (allowing the movement of animals by maintaining the continuity of areas or landscape corridors).

In addition to in-situ anoa conservation, it is important to conserve anoa outside of natural habitat (ex-situ) for educational purposes and to support the in-situ anoa population and prevent it from going extinct.

Box 3: Ex-situ anoa conservation program

Ex-situ conservation functions as a backup for the in-situ population. Ex-situ anoa populations will support a safe and viable anoa population, which maintains and minimizes the negative effects of inbreeding or out-breeding. Ex-situ anoa populations function as a gene-bank representative of the entire population, and can be used for reintroduction programs when necessary. In order to reach this objective it is estimated that 90% of genetic diversity must be maintained over at least 100 years (Frankham et.al., 2002). In order to reach this level of stability in genetic variation, a founder population consisting of a minimum of 60 adult anoas is needed, which can

be bred to reach an ex-situ population of up to 300 individuals (IUCN Conservation Breeding Specialist Group). The level of management required to reach this number is not easy, considering that exact data on anoa population sizes is not available yet. If based on two species (lowland anoa and mountain anoa), separate management is required, and therefore two separate anoa populations, each with a minimum 300 individuals (bred from 60 adult founders as explained earlier). These numbers will be difficult to achieve with the resources that are currently available. Therefore practical solutions are needed to maintain the viability of anoa populations and taking into consideration its taxonomic status and population structure.

On February 20 2011, there were 20 individuals (6 males, 14 females) held in conservation institutions in Indonesia, with specific details listed in Table 3. In addition to Conservation Institutions, some anoa are cared for by communities, governmental institutions such as BKSDA and universities with a total population of 15 individuals (11 of which are cared for by communities). Therefore the total number of anoa in the ex-situ environment is 35 individuals. However, the data requires an immediate update regarding the number of anoas cared for by communities. All of these anoa should be cared for and managed based on the guidelines from the IUCN (IUCN, 2002). The anoas found in domestic Conservation Institutions are managed in coordination with the Indonesian Zoo and Aquarium Association (PKBSI).

Anoa are also held by many zoos abroad. The international studbook keeper ensuring that ex-situ anoas are managed properly, in line with regulations and maintaining genetic diversity is Gerd Nozold (gnoetzold@zoo-leipzig.de) from Leipzig Zoo in Germany. Data from 16 February 2010, showed that there are 153 (68 males, 68 females, 7 calves) anoas held in zoos outside of Indonesia. From the total number of anoa held in captivity outside of Indonesia, 10 were born in the last 12 months. The total anoa population abroad is distributed

over 33 zoos, namely 22 in Europe, 10 in North America and 1 in Asia. However, this number should be larger as records show there are 4 anoas in Kanazawa Zoo, Japan, and 3 anoas (2 males, 1 female) in Negara Zoo, Kuala Lumpur, Malaysia.

In order to maintain the viability of the ex-situ anoa population and 90% of the population's genetic diversity over the next 100 years (Frankham et.al., 2002), population management must be integrated at both the national and international level.

Table 1. Anoa held in conservation institutions in Indonesia (data until February 2011)

No	Location	Sex		Total
		Male	Female	
	In Conservation Institutions			
1	Taman Safari Indonesia Cisarua, Bogor, West Java	2	6	8
2	Taman Safari Indonesia III, Bali	1	1	2
3	Surabaya Zoo, East Java	2	4	6
4	Ragunan Zoo, Jakarta	1	3	4
	Total	6	14	20
	Outside Conservation Institution			
5	BKSDA of South Sulawesi	-	1	1
6	Tadulako University	2	1	3
7	Kept by the people in Central Sulawesi (Basri, 2007)	?	?	11
	Total			15

2. Habitat

Anoa is a species whose lives very much depends on forests (forest dependent species), both for protection and to find food. It requires primary forests with dense vegetation cover. Mountain anoa are usually found above 1,000 m above sea level, and lowland anoa

inhabit forest areas lower than 1,000 m above sea level. Lowland anoa are generally observed in coastal forests, lowland forests and even in mangrove forests during low tide. Anoa often visit natural meadows, lakes and swamps inside the forest that aren't visited by people. The species also regularly visits water sources and salt-licks to get the salts and minerals it needs (Mustari, 1995, 2003).

3. Distribution

During the 2009 workshop in Manado arranging the Strategy and Action Plan for Anoa Conservation, data and information on anoa distribution were collected. Reports from approximately 60 workshop participants and various research results were compiled and the combined result presented in a map (Image 3). Anoa distribution was mapped based on six categories, namely confirmed range, possible range, doubtful range, former range (extirpated) including recoverable range, and unknown range. Detailed definitions for each category of distribution range are stated in image 3.

[image]

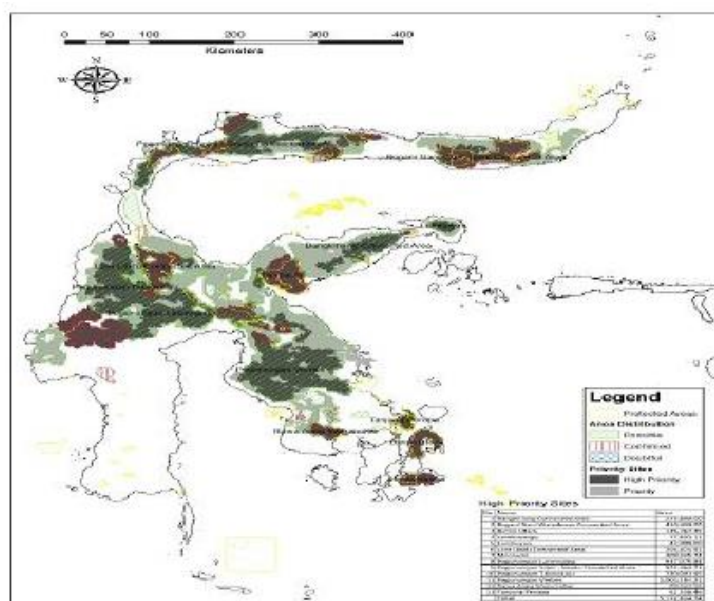


Image 3. Distribution of anoa and priority areas for anoa conservation in Sulawesi

In order to increase the effectiveness of anoa population and habitat management, priority conservation areas must be determined for the next ten years. These areas are determined based on: a). presence of anoa subpopulations (of the 4 already known), b). forest cover and connectivity between forested areas, c). status/ unit of area management (National Park, BKSDA, Protected Forest, etc.), which are spread over several areas (Table 2).

Table 2. The locations which become the main priority for the management of anoa populations and their habitat on mainland Sulawesi and Buton Island

Province/Region	Forest Area
Northern Sulawesi and Gorontalo	<ol style="list-style-type: none"> 1. Bogani Nani Wartabone Connected Area 2. Sojol Mountain – Nantu Connected Area
Central and Eastern Sulawesi	<ol style="list-style-type: none"> 1. Lore Lindu Connected Area 2. Morowali 3. Bakiriang Connected Area 4. Lombuya
Western Sulawesi	<ol style="list-style-type: none"> 1. Latimojong Mountain 2. Tajilekaju Mountain
Southeastern Sulawesi	<ol style="list-style-type: none"> 1. Tanjung Peropa 2. Mekongga Mountain 3. Verbek Mountain 4. Aopa Watumohai Swamp
Buton Island	<ol style="list-style-type: none"> 13. Lambusango 14. Northern Buton

CHAPTER III

STRATEGIC PLAN

A. Vision

The vision for anoa conservation in 2021 is the realization of stable anoa populations in priority areas located in the natural habitat of the species by decreasing the rate of poaching and illegal trade, maintaining existing habitat and the active involvement of stakeholders.

B. Mission

In order to realize the vision for anoa conservation in 2021, the following mission is formulated.

1. Increasing the control of poaching and illegal trade through improved security, law enforcement and increased awareness in society.
2. Population and habitat development through security and improvement of habitat quality.
3. Establishing data/information base and supporting system for conservation decision making.
4. Increasing the role of Conservation Institutions in supporting population increases in their natural habitat.
5. Improving education and training for field staff/managers and communities.
6. Improving cross-regional, inter-institutional/organizational and interdisciplinary cooperation and partnerships.
7. Providing sustainable conservation funding from governmental (national and regional), non-governmental, domestic and foreign funding sources.
8. Performing environmental education and involving communities in conservation activities and benefits from maintaining conservation forest/areas.

C. Internal Environment Analysis

1. Strength

Meticulous analysis of the internal environment indicates that the aspects that will become the strength of the organization are as follows:

- a. The species is a flagship species endemic to Sulawesi Island and Buton Island and a potential source of germplasm for the welfare of local communities.
- b. Availability of technical institutions possessing authority in the management and security of species (Council/Natural Resource Conservation Council/BKSDA and National Park Council) which are supported by functional forces in UPT such as PEH, SPORC brigade and forest rangers.
- c. Availability of political support from the Province and Regency/City governments, which is shown through the use of anoa in the region's logo.

2. Weakness

Meticulous analysis of the internal environment indicates that the weaknesses of the organization are as follows.

- a. There is no comprehensive fundamental data available on the population, habitat and distribution of anoa and the data that is available has been collected using different methodologies.
- b. Limits to the extent of control exercised by staff/managers of technical institution (Council/Natural Resource Conservation Council/BKSDA and National Park Council) due to the limited availability of personnel including SPORC, forest rangers and PEH, limited abilities and knowledge of management units and stakeholders, and limited supporting facilities and infrastructure in security, law enforcement, public awareness and monitoring and inventorying of species.

- c. Cross-institutional coordination and integration at the national/provincial/regency/city levels related to species conservation efforts are not effective yet.
- d. Limited allocation of conservation funding, both in the technical institutions (Council/Natural Resource Conservation Council/BKSDA and National Park Council) and the provincial/regency/city governments.

3. **External Environment Analysis**

a. **Opportunity**

Meticulous analysis of the external environment indicates that aspects which can become opportunities for the organization are as follows:

- 1) There is concern from the provincial/regency/city governments, universities and non-governmental organizations to improve conservation efforts.
- 2) Research on biology, ecology and genetics is still wide open through cooperation with universities, LIPI or other research organizations.
- 3) Availability of sources of potential funding from the national government, provincial government and regency/city government, business entities and other societal organizations.
- 4) There are possibilities to increase the number of adequate staff and capacity of technical institutions in supporting conservation.

b. **Challenges/Threats**

Meticulous analysis of the external environment indicates that aspects which can become challenges/threats to the performance of the organization are as follows:

- 1) The high level of public expectation for the realization of conservation success.

- 2) The high rate of conversion of forest areas and fields for farming/plantations, mining, residential development and other factors which causes the fragmentation and degradation of habitat.
- 3) The high level of poaching and illegal trade which cannot yet be sufficiently controlled.
- 4) Lack of knowledge in society of regulations related to the protected species status of anoa.
- 5) Lack of knowledge in society of the importance of maintaining forest ecosystems, which benefit the continuity of life.
- 6) The low rate of income and low levels of education in communities around forest areas inhabited by anoa.

c. Assumption

In analysing the internal and external environment and in anticipating organizational development until 2022, the following assumptions are made:

1. Institutional work load
There is no significant change in the governmental system, organizational structure and workload of the technical institutions and other related institutions.
2. Human resources
There is improvement in the quantity, competence and capacity of the officers in technical institutions and other related institutions, including the involvement of society in supporting conservation efforts.
3. Technology
There will be an increasing availability of technology to support conservation efforts such as management information systems, integrated security systems, inventorying systems and population monitoring, detection of genetic purity, and others.

4. Multi-party support

The effectiveness of support through cooperation with provincial governments and regency/city governments, universities, research institutions, non-governmental organizations, local societies and business entities can be improved.

d. Determinant Factors of Success

Based on the analysis of the internal and external environment and the assumptions outlined above, the following determinant factors of success can be identified:

1. Performance of technical institutions (Ditjen PHKA, Council/KSDA Council and Council/National Park Council) and certain forest management units.
2. Effectiveness of support from related institution/organizations including provincial governments and regency/city governments, universities, research institutions, non-governmental organizations and business entities.
3. Effectiveness of fund mobilization for conservation, from the national government, provincial governments, regency/city governments, business entities, non-governmental organizations.

CHAPTER IV

STRATEGIC MANAGEMENT

A. Program

Based on analysis of the internal and external environment, assumptions made and the determinant factors of success outlined in the previous chapter, the following program will be performed in the next 10 years.

1. Controlling Poaching and Illegal Trade

Poaching and illegal trade occurring throughout Sulawesi Island and Buton Island is one of the main factors causing decreases in anoa populations. Therefore, a program to control poaching and illegal trade is required, which is integrated more intensively between institutions (Ditjen PHKA including UPT KSDA and National Park, Provincial Government, Regency/City Government, National Police, Attorney and Judicial) and across provinces and regencies/cities.

Controlling poaching and illegal trade with the active involvement of communities needs to be coupled with law enforcement at the local and national level. The other priority is to cut off illegal trade chains by focusing on large traders and owners of capital. Next to this, alternative sources of livelihood and protein are needed for local communities utilizing anoa.

2. Population Management in Nature

Population management aims to maintain safe or viable populations in their natural habitat by understanding population size and their distribution and the genetic mapping of population structures and population parameters.

The management of wild anoa populations is not limited to conservation areas and protected forests only, but also areas of production forest and plantations, etc., irrespective of whether these areas are actively

managed at the present time or not. Therefore best management practices for anoa management outside of conservation areas (such as protected forest areas, productive forest and other utilization area) need to be produced.

3. Habitat Management

Currently the natural habitat of anoa tends to be degraded and the size of these areas are decreasing. Therefore the main focus of habitat management is to maintain remaining habitat that is still in good condition and to restore degraded forest through rehabilitation, enrichment and ecosystem restoration in order to recover carrying capacity. This includes safeguarding connectivity between anoa habitat areas and maintaining population/subpopulation presence.

4. Establishment of a Database and Supporting System for Decision Making

The implementation of anoa conservation programs, both in-situ and ex-situ, requires support from an interconnected database and a supporting system for decision making, which is developed at each management level, from the national level (Ditjen PHKA attn. the concerned technical directorate) to the regional level (Council/KSDA Council/National Park, Regional Division Head, Regional Section Head). Developing the database system may also involve other stakeholders such as research institutions, universities, and NGOs.

5. Improvement of the Role of Conservation Institutions

Successful management of ex-situ programs in Conservation Institutions, especially in Zoos, Animal Parks, Safari Parks, and others, plays an important role in supporting anoa conservation programs. The captive population can function as a backup to the wild population. The Conservation Institutions need to be managed well and in line with existing rules/guidelines at national and international levels.

6. Education and Training for Operational Staff, NGO and Local Communities

The competence of operational staff in technical institutions (Council/KSDA Council/National Park), NGO's, local communities and others, especially those active in wildlife conservation, still needs to be improved. Therefore, more focus is required to improve their capacity, especially in habitat mapping and the surveying, inventorying and monitoring of populations. This will be performed through education and training and includes activities related to security and patrolling, law enforcement, data processing and reporting. Next to this, increased capacity is needed in training activities for facilitators, tourist guides, interpreters and counselors, and in ecotourism and environmental education training. It is expected that communities will experience positive benefits from the presence of anoa and that they therefore will participate in protecting the anoa and its habitat.

7. Cooperation and Partnerships

Conservation efforts are not only the responsibility of technical institutions (Ditjen PHKA, Council/KSDA Council and or National Park) consisting of government officials at national and regional levels which function as regulators, facilitators and supervisors. They require support from various parties to implement field activities.

Both in-situ and ex-situ anoa conservation activities require support from other parties such as the Provincial Government, Regency/City Government, business entities/private businesses such as plantation companies, mining companies, timber companies and others. This also includes NGOs, universities, Conservation Institutions and other societal groups. In order to support the performance of the government an anoa conservation forum needs to be formed, serving as an independent non-profit organization whose members consist of individuals caring about anoa conservation efforts. Therefore resources

from the government are required on a regular basis for the coordination and mobilization of the organization. This can take place through direct meetings, mailing lists, or other ways of communicating.

8. Sustainable Funding

The implementation of an anoa conservation program requires sufficient and sustainable allocation of funding. The fund itself can be mobilized from various sources such as the national government, provincial governments, regency/city governments, business entities/private businesses, community organizations, donor organizations and individuals. Funding from other financing sources can also be searched for, including environmental services financing mechanisms such as REDD+, water or geothermal utilization, ecotourism, and others.

B. Target

1. The target of the Poaching and Illegal Trade Control program is the controlling of poaching and illegal trade taking place inside and outside of conservation areas in order to decrease the number of poaching events and the illegal trade, and to increase the public's awareness of the law.
2. The target of the Population Management in Nature program is the realization of viable anoa populations in 14 priority areas through the provisioning of survey guidelines and standardized monitoring, as well as provisioning anoa distribution and population data.
3. The target of the Habitat Management program is the availability of safe and suitable habitat for anoa (availability of space, food, water and shelter) especially in priority areas, by increasing the carrying capacity of the habitat.
4. The target of the Improvement of the Role of Conservation Institutions program is the realization of support for population development in nature by increasing ex-situ populations and ordering the administration in conservation institutions so that Conservation Institutions can take on

the role of providing a population backup for in-situ (in-situ and ex-situ link).

5. The target of the Establishment of a Database and Supporting System for Decision Making program is the availability of a database and supporting system for decision making at all management levels of technical institutions, from national to regional levels that is regularly updated. The system will allow conservation policy to be implemented based on a management information system, as well as increasing the speed and accuracy of policy decision making, and improving public data services.
6. The target of the Education and Training of Operational Staff program is the implementation of education and training of operational staff from the government, NGO's, local communities and others to increase the number and capacity of operational officers and increase the performance of institutions, especially in supporting anoa conservation.
7. The target of the Cooperation and Partnerships program is the implementation of cooperation/ partnerships with related institutions/ organizations. This will increase networking and performance of institutions, as it is acknowledged that anoa conservation cannot be performed by a single sector, but requires involvement across sectors and institutions as well as the involvement of the private sector, NGOs, and other parties.
8. The target of the Sustainable Funding program is the availability of sustainable conservation funding support to increase the allocation of funds and fund utilization for anoa conservation including for neighbouring communities.

C. Activities

In order to implement the anoa conservation programs, the following activities have been formulated.

1. The activities of the Poaching and Illegal Trade Control program can be reached through increased public legal awareness, for example through environmental education, identifying groups of/ in communities and nodes of anoa poaching and trading activities, providing alternative livelihoods and sources of protein and economic income to communities to replace the poaching and utilization of anoa, performing standardized and regular patrols by involving parties as a control measure against anoa poaching and trade.
2. The activities of the Population Management in Nature program are conducting surveys and monitoring activities on anoa populations and distribution in priority areas using standardized guidelines, performing genetic mapping and the mapping of population structures, as well as studying population parameters (birth, mortality, sex ratio and age structure), conducting release studies, translocating anoa experiencing human-wildlife conflict and/ or anoa living in fragmented areas which are not viable in the long term, and compiling best management practices for anoa management outside of conservation areas (such as in protected forest areas, production forest and other areas of exploitation).
3. The activities of the Habitat Management program consist of securing anoa habitat in priority areas through patrolling, monitoring, law enforcement and involving local communities, performing habitat management by conducting rehabilitation or restoration activities and performing landscape-based habitat development activities.
4. The activities of the Improvement of the Role of Conservation Institutions program are appointing an anoa studbook keeper, performing training of studbook keeping, population management, husbandry, to staff of all Conservation Institutions that have anoa in their collections, performing the accreditation of Conservation Institutions, performing standardization activities for ex-situ anoa management and optimizing the functioning of anoa Animal

Rehabilitation Centers (PRS) in subpopulation areas to rehabilitate anoa that have been confiscated or returned by private individuals.

5. The activities of the Establishment of a Database and Supporting System for Decision Making program are developing and providing software and hardware, collecting data from field surveys and studies related to anoa, improving the capacity of human resources related to database systems, websites and the provisioning of information through training or comparative studies, as well as regularly updating data and information related to anoa conservation at national and regional levels.
6. The activities of the Education and Training of Operational Staff program are compiling plans and the implementation of education and training related to surveying and monitoring of populations and habitats, security, law enforcement, data processing and reporting, and performing training supporting anoa conservation, such as training to become a facilitator, tourist guide and/or interpreter and training in, ecotourism, environmental education, patrolling, counseling.
7. The activities of the Cooperation and Partnerships program are the establishment of an anoa conservation network, preparation of a MoU with related partners/ stakeholders to reach the stipulated program and the implementation of cooperation/ partnerships, especially in the 14 priority areas, as well as the active facilitation of meetings of the anoa conservation forum.
8. The activities of the Sustainable Funding program are fund mobilization from various sources within and outside of the country, both from governmental (national, province and regency/ city) and non-governmental (business entity, community organization, donor organization and individuals) sources, and developing financing mechanism through programs, for example the financing of environmental services through programs such as REDD+, water or geothermal utilization, ecotourism.

D. Performance Measurement

1. Indicators and performance standard

In order to implement the Strategy and Action Plan for Anoa Conservation 2013-2022, the following indicators and performance standards are stipulated:

- a. The indicators and performance standards of the Poaching and Illegal Trade Control program are the gradual increase in legal awareness of communities located around the 14 priority areas in 2014, 2017 and 2022, the identification of communities, groups of communities or individuals poaching and trading anoa, the identification of alternative solutions for the poaching and trading of and the products derived from it, data and information on anoa poaching and trading are regularly updated every 6 months, a decrease in anoa poaching and illegal trade of 80% by 2022, the increase in the number of communities playing an active role in controlling poaching, trade and other illegal activities, the increase in the number of communities whose livelihoods previously depended on anoa poaching and trading, that have shifted to alternative livelihoods.
- b. The indicators and performance standards of the Population Management program are the availability of standardized survey and monitoring guidelines in 2013, the gradual availability of anoa population and distribution data for 7 priority areas in 2015 and 7 priority areas in 2019, the availability of anoa genetic mapping, the maintaining of genetic variation in each anoa population/ subpopulation, the understanding of anoa demographic parameters in order to support viable anoa population/ subpopulation management in all priority areas, the dissemination of results from scientific reports and assessments to all related stakeholders as an input for better anoa conservation management, rescuing anoa experiencing human-wildlife conflict no later than 2015, and or

rescueing anoa living in fragmented areas which are not viable in the long term, compiling guidelines of best management practices (BMP) for anoa management outside of conservation areas in 2014.

- c. The indicators and performance standards of the Habitat Management program are a decrease in the rate of encroachment and other illegal activities that can degrade the quality and quantity of anoa habitat by 2022, habitat damaged following encroachment and other illegal activities can be rehabilitated and restored, habitat carrying capacity (availability of food, water and shelter) can be maintained and/ or improved, and the presence of habitat suitable for anoa in each population/ subpopulation location and the safeguarding of connectivity and intactness of anoa habitat.
- d. The indicators and performance standards of the Improvement of the Role of Conservation Institutions program are the formal appointment and stipulation of an anoa studbook keeper by PHKA and PKBSI in 2013, anoa located in Conservation Institutions in Indonesia are a part of the international anoa studbook, training will be organized every 4 years and ex-situ anoa are managed in line with the stipulated rules and integrated into the national and international studbook, increasing the capacity of conservation staff in studbook management, husbandry and other aspects, all conservation institutions will be accredited no later than 2014, especially those who keep anoa, the compiling of ex-situ anoa conservation guidelines, standardizing anoa management and listing this standardized management in a studbook that is managed and regularly updated and reported to the Management Authority, the exchange/ borrowing of anoa between Conservation Institutions starting in 2014 in order to prevent inbreeding/ outbreeding in the ex-situ anoa population, Indonesian conservation institutions are participating in international population management in line with international standards (world zoo strategy) and there

are anoa Animal Rehabilitation Centers (PRS) in subpopulation areas to rehabilitate anoa that have been confiscated or returned by private individuals, who perform their activities optimally and in line with standard criteria that have been set nationally/ internationally.

- e. The indicators and performance standards of the Establishment of a Database and Decision Making Supporting System program is that starting from 2013 policy making is faster and more accurate, the improvement of public services towards the need for data and information, conservation policy based on information management systems in each working area, staff capabilities in development, database updating including the presentation of information, as well as the regular updating of data and information related to anoa conservation in a database by 2022.
- f. The indicators and performance standards of the Education and Training of Operational Staff program are that starting from 2013 and until 2021 regular education and training will be organized by each related institution, the increase in numbers and capacity of anoa conservation operational staff in the field, the increase in the capabilities of operational officers including from NGOs, local communities and other similar actors in carrying out surveys, monitoring, security and law enforcement activities, the processing of data in line with the approved/ stipulated guidelines, the increase in capacity of operational officers in performing facilitation, interpretation, environmental education and ecotourism activities, as well as in tourist guide activities, patrolling, counseling.
- g. The indicators and performance standards of the Cooperation and Partnerships program is that starting from 2013 there is increased networking between related institutions/organizations concerning anoa conservation through the Anoa Conservation Forum, the increase in the number of stakeholders who have concern towards anoa conservation and the increase in performance by related

institutions, the existence of an active forum marked by communication between the parties using online forms and/or meetings at least once every 2 years.

- h. The indicators and performance standards of the Sustainable Funding program is the increase in fund allocation for conservation in Sulawesi to USD10 million starting from 2013, the increase in the utilization of funds for anoa conservation, utilization of funds from environmental services in at least one priority area per year starting from 2015, funding is available for a minimum of 14 priority areas.

2. Monitoring and evaluation

The monitoring and evaluation of the implementation of the programs and activities in the strategy and action plan for anoa conservation are as follows:

- a. Evaluation before the implementation of programs/ activities (pre-evaluation) is conducted for policy formulation, programs and activity planning, implementation/ technical guidance and guidelines for anoa conservation.
- b. Monitoring is performed on the input of resources to implement (the means with which activities can be conducted) and activities which have been programmed/ planned in the strategy and action plan for anoa conservation. Monitoring is performed on an annual basis.
- c. Evaluation of the implementation of programs/ activities (on-going activities) is performed to assess the effectiveness and performance in implementing activities and input.
- d. Evaluation after the implementation of programs/ activities (post evaluation) is performed to assess the output and outcome both in the short term and in the long term.

CHAPTER V
LOGICAL FRAMEWORK AND TIMEFRAME
STRATEGY AND ACTION PLAN FOR THE CONSERVATION OF ANOA IN 2013-2022

Table 4. Logical framework for the strategy and action plan for the conservation of anoa 2013-2022

NO	PROGRAM	TARGET	ACTIVITY	PERFORMANCE INDICATOR	TIME FRAME (YEAR)
1.	Poaching and illegal trade control	Controlling poaching and illegal trade within and outside of conservation areas	– Increasing the public’s legal awareness, for example through environmental education	Improvement of legal awareness of the communities living around the 14 priority areas: a. 4 priority areas b. 3 priority areas c. 7 priority areas	2013-2015 2013-2018 2013-2022
			– Identifying community groups and nodes of anoa poaching and trading activities	– Identification of community/community groups/individual anoa poachers and traders – Law enforcement related to anoa poaching and trading activities	2013-2022 2013-2022
			– Performing standardized	– Data and information on anoa	

			<p>and regular patrols by involving parties as a control measure against anoa poaching and trading</p>	<p>poaching and trading are updated on a regular basis every 6 months</p> <p>a) 4 priority areas</p> <p>b) 3 priority areas</p> <p>c) 7 priority areas</p> <p>– The decreasing of anoa poaching and illegal trade by 80% in 2021</p> <p>– The active involvement of communities in controlling poaching, trade and other illegal activities</p>	<p>2013-2015</p> <p>2016-2018</p> <p>2019-2022</p> <p>2013-2022</p> <p>2013-2022</p>
2	Population management in nature	The realization of viable anoa populations in 14 priority areas as displayed in Image 3.	<p>– Surveying and monitoring the population and distribution of anoa in priority areas using standardized guidelines</p>	<p>– Availability of standardized survey and monitoring guidelines</p> <p>– Availability of anoa population and distribution data:</p> <p>a) which is updated every 5 years for 7 priority areas</p> <p>b) updated for the other 7</p>	<p>2013</p> <p>2013-2015</p> <p>2016-2019</p>

				<p>priority areas</p> <ul style="list-style-type: none"> – Surveys are performed at least once in areas assumed to be anoa habitat located outside of priority areas, 	2016-2022	
			<ul style="list-style-type: none"> – Mapping the genetics and structure of anoa populations and study of population parameters (birth, mortality, sex ratio and age structure) 	<ul style="list-style-type: none"> – Availability of a genetic map of anoa – The genetic variation in each anoa population/ sub-population can be retained. – Parameters of anoa demography are known in order to support the management of viable anoa populations/sub-populations in all priority areas – Dissemination of scientific reports/assessment results to all related stakeholders to serve as input for better anoa conservation management 	<p>2013-2015</p> <p>2015-2022</p> <p>2013-2015</p> <p>2016</p>	
				<ul style="list-style-type: none"> – Conducting release studies 	<ul style="list-style-type: none"> – Rescuing of anoa experiencing 	2016

			or translocating those anoa experiencing severe human-wildlife conflicts or anoa living in fragmented areas which are not viable in the long term	human-wildlife conflict or anoa living in fragmented areas which are not viable in long term	
			– Compiling best management practices (BMP) for anoa management outside of conservation areas (such as in protected forest areas, production forests and other exploitation areas)	– Compilation of BMP guidelines for anoa outside of conservation area	2013
3.	Habitat Management	Availability of suitable habitat for anoa (availability of space, food, water and shelter)	– Securing of anoa habitat in priority areas through patrolling, monitoring, law enforcement and the involvement of local communities	– Decreasing the rate of encroachment and other illegal activities which could decrease the quality and quantity of anoa habitat	2013-2022
			– Habitat management	– Habitat damaged due	2013-2022

			through rehabilitation or restoration	to encroachment and other illegal activities can be rehabilitated and restored – Habitat carrying capacity (availability of food, water and shelter) can be maintained or improved	2013-2022
			– Landscape-based habitat development	– Safeguarding the connectivity and intactness of anoa habitat	2013-2022
4.	Improvement of the role of Conservation Institutions	Conservation Institution perform the role of in-situ population backup (in-situ and ex-situ link)	– Stipulating an anoa studbook keeper	– Formal appointment and stipulation of anoa studbook keeper by PHKA with PKBSI – Anoa located in Conservation Institutions in Indonesia are part of the international anoa studbook	2013 2013-2022
			– Training of studbook keeping, population management and animal husbandry to staff of all Conservation Institutions	– Implementation of training and ex-situ anoa management (Conservation Institution) in line with established rules and integrated into national and	2013, 2016, 2020

			that have anoa in their collections	international studbooks – Increasing the capacity of staff of conservation institutions in studbook management, animal husbandry and others	2013-2022
			– Accreditation of Conservation Institutions	– All Conservation Institutions are accredited, especially those that have anoa in their collection	2013-2014
			– Standardization of ex-situ anoa management for the founder population objective	– Ex-situ anoa conservation guidelines are compiled – Standardizing anoa management and listing this in in a studbook that is managed and updated on a regular basis and reported to the Management Authority	2014 2014
			– Identifying founder individuals in national Conservation Institutions	– The Identification of anoa founder individuals in Conservation Institutions in Indonesia	2014
			– Exchange of individual anoa	– Exchange/ borrowing of Anoa	2013-2022

			<p>between conservation institutions based on ex-situ anoa management guidelines in order to avoid decreases in genetic quality due to inbreeding and/or outbreeding</p>	<p>for breeding purposes between Conservation Institutions in order to avoid inbreeding/outbreeding</p> <ul style="list-style-type: none"> - Avoidance of inbreeding and/or outbreeding in the ex-situ anoa population 	2013-2022
			<ul style="list-style-type: none"> - Improvement of anoa breeding in national Conservation Institutions 	<ul style="list-style-type: none"> - Indonesian conservation institutions participate in the management of international populations, in line with international standards (World Zoo Strategy) 	2014-2022
			<ul style="list-style-type: none"> - Optimizing the functioning of anoa Animal Rehabilitation Centers in subpopulation areas to rehabilitate anoa that have been confiscated and/or returned by private individuals 	<ul style="list-style-type: none"> - Anoa Animal Rehabilitation Centers in subpopulation areas (to rehabilitate confiscated anoa and/or individuals returned by private individuals) operate optimally and in line with standard criteria that have been established nationally/ 	2014-2022

				internationally	
			– Development of information packages and conservation education related to anoa in Conservation Institutions within or outside of the country	– Availability of information and education packages related to anoa conservation	2013-2014
5.	Establishment of a database and supporting system for decision making	Availability of a database and supporting system for decision making at all management levels that is regularly updated	– Developing and providing software and hardware	– Policymaking is faster and more accurate	2013
			– Collecting data from field surveys and studies related to anoa	– Increase of public services for data and information purposes	2013
			– Increasing human resource capacity related to database systems, websites and information provisioning through training or comparative studies	– Management Information System (MIS) based conservation policy in each working area	2013
				– Capabilities of staff in developing and updating databases are included in information presentations	2013-2022

			– Regularly updating data and information related to anoa conservation at national and regional levels	– Regularly updated data and information related to anoa conservation in a database	2013-2022
6.	Education and training of operational staff of the government, NGO's, local communities and others	Implementation of education and training of operational staff of the government, NGO's, local communities, and others	– Compiling plans and implementation of education and training related to surveying and monitoring of populations and habitat, security, law enforcement, data processing and reporting	– Availability of education and training plans in each related institution – The increase in the number and capacity of anoa conservation field staff – The improvement of the capabilities of operational staff including staff from NGO's, local communities and others in performing surveys, monitoring, security, law enforcement and data processing in line with approved guidelines	2013-2022 2013-2022 2013-2022
			– Performing training supporting anoa conservation, such as	– The improvement of the capacity of operational staff in performing facilitation,	2013-2022

			training to become a facilitator, interpreter and/or tourist guide and training in ecotourism, environmental education, patrolling, counseling, etc.	interpretation, environmental education, ecotourism, tourist guiding, patrolling, counseling, etc.	
7.	Cooperations and partnerships	Implementation of cooperations/ partnerships with related institutions/ organizations	– Establishment of an anoa conservation network	– The increase in networking between related institutions/ organizations concerned with anoa conservation through the Anoa Conservation Forum	2013-2022
			– Preparation of MoU with related partners/stakeholders to reach the stipulated program and the implementation of cooperations/ partnerships especially in the 14 priority areas	– The increase in the number of stakeholders showing concern towards anoa conservation and the improvement in performance of the related institution	2013-2022
			– Active facilitation of anoa	– The existence of an active	2013-2022

			conservation forum meetings	forum marked by communication by the parties through online means and/or meetings at least once every 2 years	
8.	Sustainable funding	Availability of sustainable conservation funding support	<ul style="list-style-type: none"> – Fund mobilization from various sources within and outside of the country, both from the government (national, province and regency/city) and non-government sector (business entities, community organizations, donor organizations and individuals) 	<ul style="list-style-type: none"> – An increase in the allocation of funds for conservation in Sulawesi of up to USD10 million – The increase in the utilization of funds for anoa conservation 	<p>2013-2022</p> <p>2013-2022</p>
			<ul style="list-style-type: none"> – Developing financing mechanism in programs, for example programs financing environmental services such as REDD+, water or 	<ul style="list-style-type: none"> – The utilization of funds from environmental services in at least one priority area per year – Available funding for a minimum of 14 priority areas until 2021 	<p>2015-2022</p> <p>2015-2022</p>

			geothermal exploitation, ecotourism, etc.		
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**Certified to be a true copy of the original
HEAD OF LEGAL AND ORGANIZATION BUREAU,**

**Signed
KRISNA RYA**

**MINISTER OF FORESTRY
REPUBLIC OF INDONESIA,**

**Signed
ZULKIFLI HASAN**