04.

Current Response Status and Strategies

4-1. Objectives

4-2. Progress of Response and Implementation Strategies

4-3. Education and Public Awareness

National Institute of
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Objectives

Wild boar ASF Eradication in Korea

01 Zoning

02 Fence
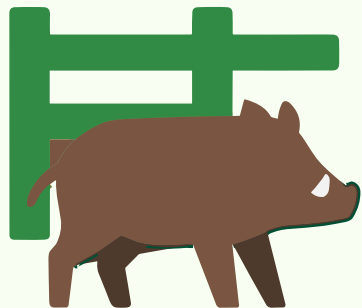
03 Capture
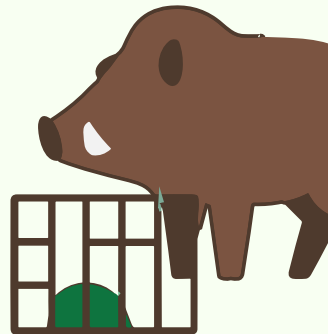
04 Carcasses

05 Surveillance

Designation of Control Zones

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1 **Purpose**

When ASF occurs in wild boars, control zones are established by comprehensively assessing the outbreak site and surrounding circumstances to ensure effective implementation of response policies.

2 **Type**

Affected Area
10km radius from Outbreak site, Recently Outbreaks Not Occurred

Risk Area
recently occurred & Potential spread area
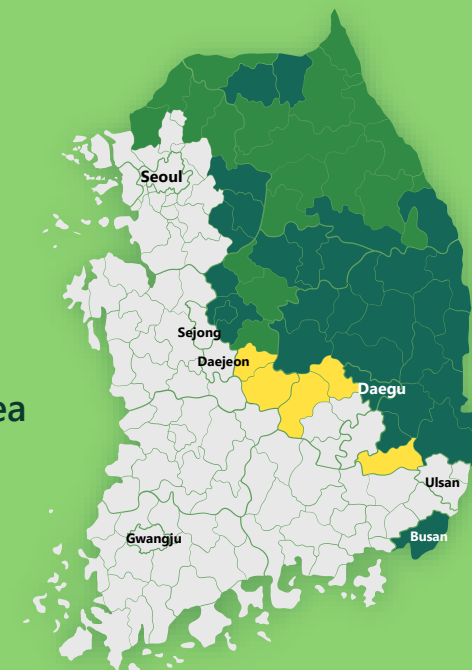
Focused Control Area
potentially Contaminated or Concerned area

Preemptive Control Area
All areas of the nationwide except for Outbreak, Risk, Focused Control area

Zoning

Designation of Control Zones (Exclusion Fences)

1 **Exclusion Fences**

A **Purpose of Installation**

To obstruct the movement of infected wild boars and prevent the spread of disease when ASF-positive cases are confirmed.

B **Types of Facilities**

Electric fences, wire mesh fences (chain-link wire), net fences, etc.
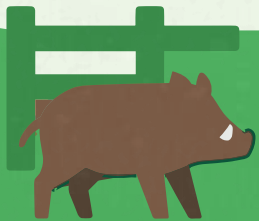
Electric fences

Wire mesh fences

Net fences

C **Responsible Authorities**

Local governments (primary and secondary fences), Ministry of Environment (wide-area fences).

Fence

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Ministry of Environment
National Institute of
Wildlife Disease Control and Prevention

2 **Fence Installation Scope**

Wide-area

Ministry of Environment

Secondary

Primary

Radius of 1.3km

Radius of 10~30km

Wide range

Outbreak site

Flexible Setup

Local governments
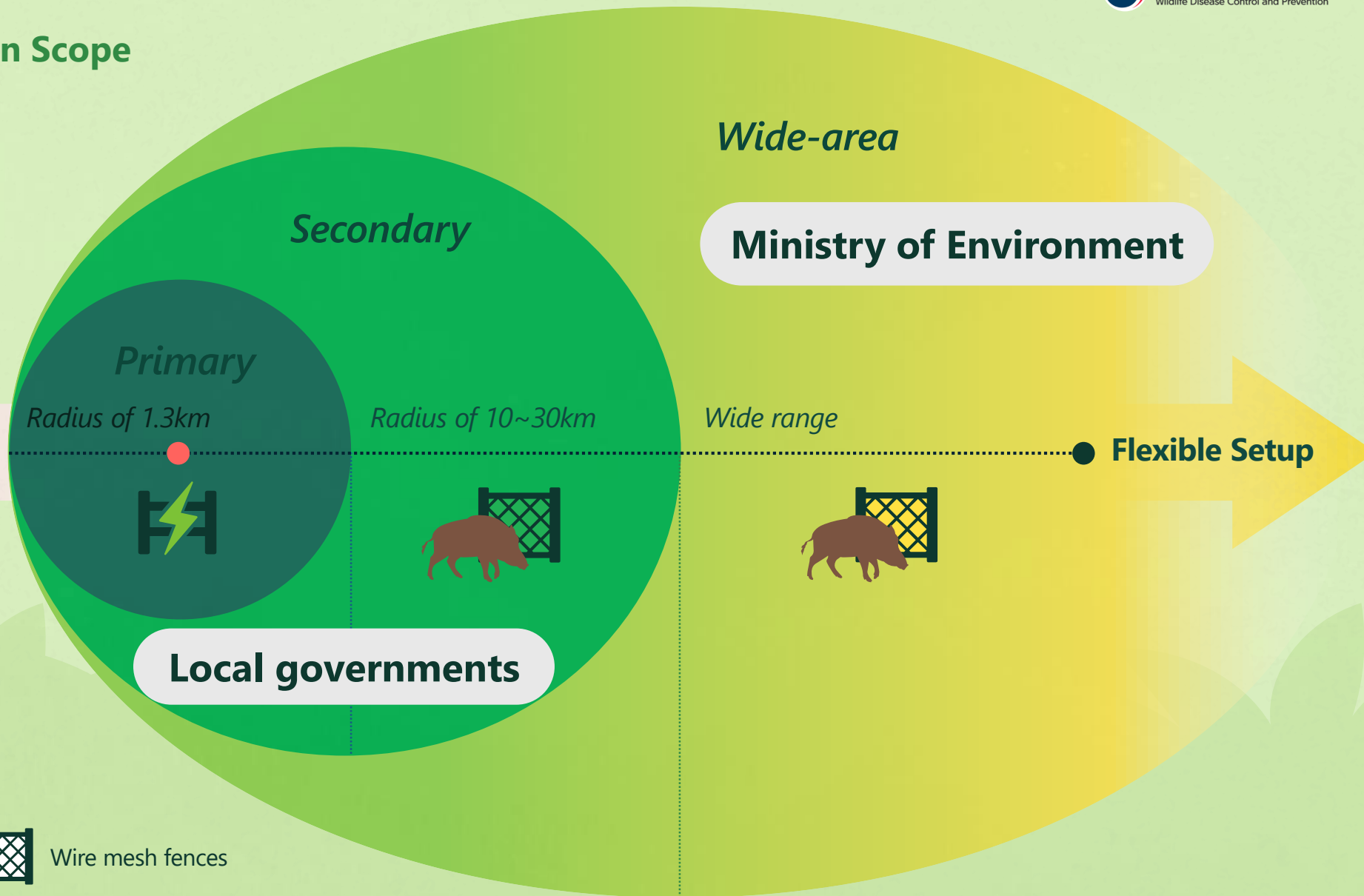
Electric/Net fences

Wire mesh fences

Wild Boar

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2 **Fence Installation Scope**

Primary Fence

Secondary Fence

Wide-area Fence

Flexible Setup

Coverage:

5 km²

(approx. 1.3 km radius)

TYPE:

Electric or net fence

Quick-response fencing is installed near outbreak sites to immediately contain the infected area.

Coverage:

30 km²

(approx. 3.0 km radius)

TYPE:

Reinforced wire mesh

Stronger physical barriers are built to cover the outer boundary of the outbreak area.

Scope:

Border areas between ≥ 2 municipalities

Trigger:

Early signs of inter-regional spread
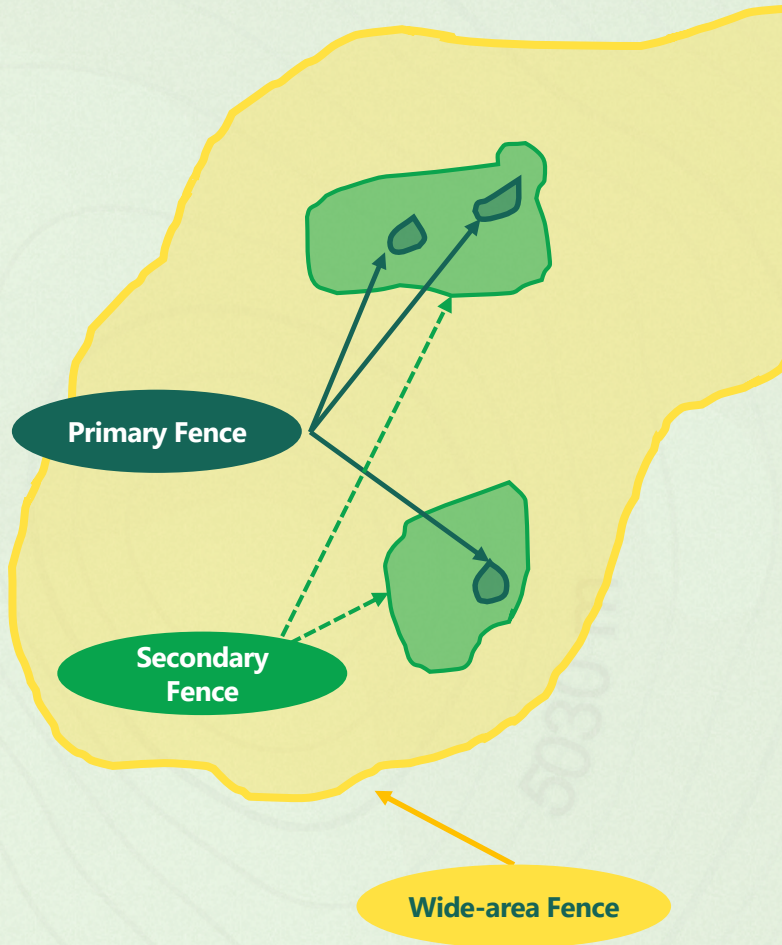
When spread is suspected across regions, preemptive fences are installed across city/county borders.

- **Flexible fencing strategy**

- **Coordination with Ministry of Environment**

Fence types and locations can be adjusted based on terrain, material supply, and spread patterns, in consultation with relevant authorities.

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3 **Fence Installation Situation**

Primary Fence

Secondary Fence

Wide-area Fence

Primary electric fence:

5 km²

radius of the outbreak site

Secondary iron fence:

30 km²

radius of the outbreak site (901km)

- *Route designed based on the surrounding terrain*
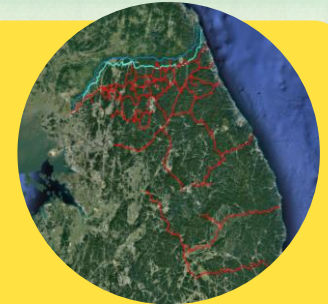- *Height approx. 1.5m, steel net(net size approx. 10cm)*

Regional iron fence:

1,831 km

installed in wide area

- *Along major highways, rail roads, stone falling barrier, river/streams etc.*

- *Recently with spread of ASF, our strategy in using fence changed from regional scale to individual farms*

3 Fence Installation Situation (Wide Area Regional Fences)

| 1st Regional fence | 2nd Regional fence | 3rd Regional fence | 4th Regional fence | 5th Regional fence |

360km

114km

389km

667km

301km

Fence type	2019	2020	2021	2022	Sum (km)
Primary + Secondary	343 km	298 km	375 km	34 km	1,050 km
Regional	360 km	503 km	667 km	301 km	1,831 km

budget: about 162 billion KW

Wild Boar Population Control (Population Control and Removal Targets)

1 **Purpose**

Prevent the spread of ASF *(African Swine Fever)*

- Set wild boar capture targets nationwide
- Includes regions with no reported ASF cases

2 **Objective**

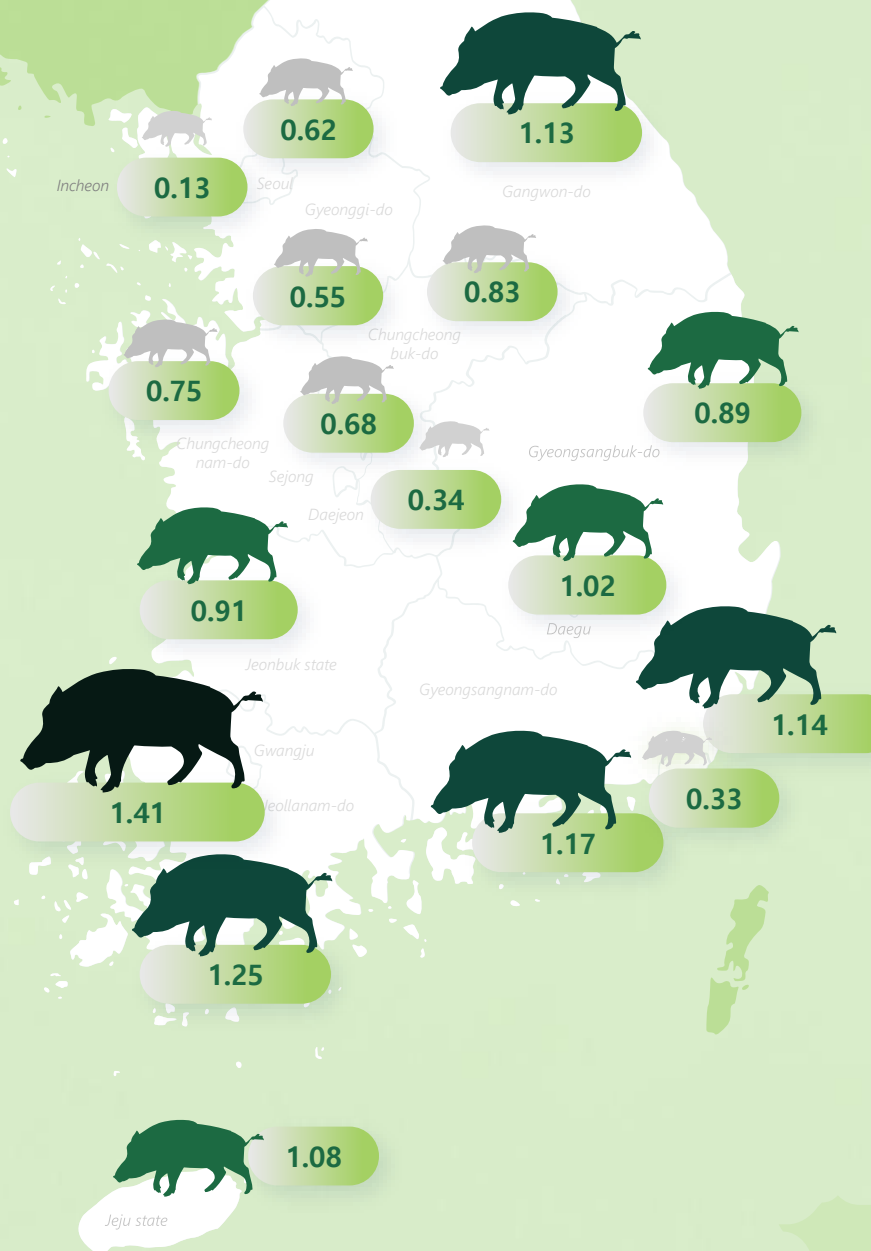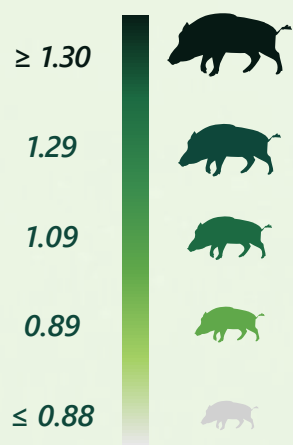**Nationwide wild boar habitat density maintained below 0.7 head per ㎢**

※ This figure is based on the FAO (2020) report, Ecology and Control of African Swine Fever in Wild Boar, which recommends a target density that minimizes ecological impact while reducing population levels.

3 **Targeted Management**

- Set capture targets by local governments and conduct monthly performance analysis and evaluation
- Support underperforming local governments through cause analysis and by providing enhanced capture and search measures *(e.g., thermal drones, GPS trapping devices, detection dogs).*
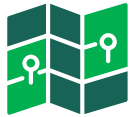
Wild Boar Population Control (Wild boar Habitat Survey)

1 **Purpose** Presentation of Wild Boar Characteristics and Regional Habitat Density for ASF Response

2 **Method**

2,550 survey grids(1km² each) **established nationwide**

Camera traps: Lower detection rate compared to tracking and genetic analysis

Tracking survey: Footprints, hair, feces, and rubbing marks recorded monthly with GPS data

Annual comparison: Monitoring changes in habitat density and regional distribution

DNA analysis: Individual wild boars identified through genetic testing of collected hair samples
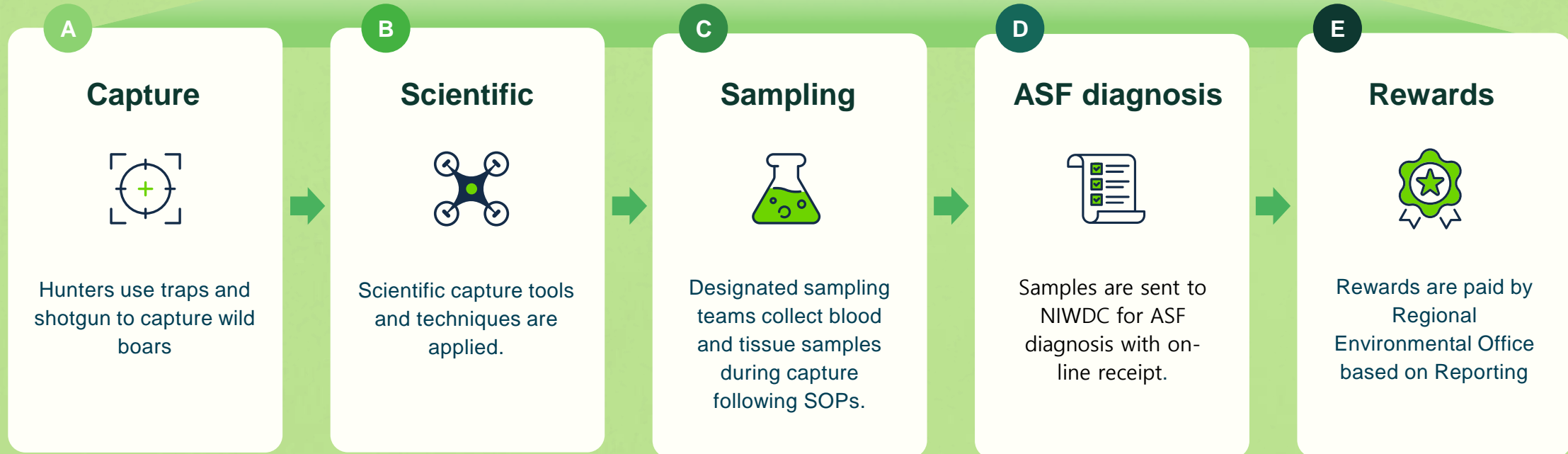
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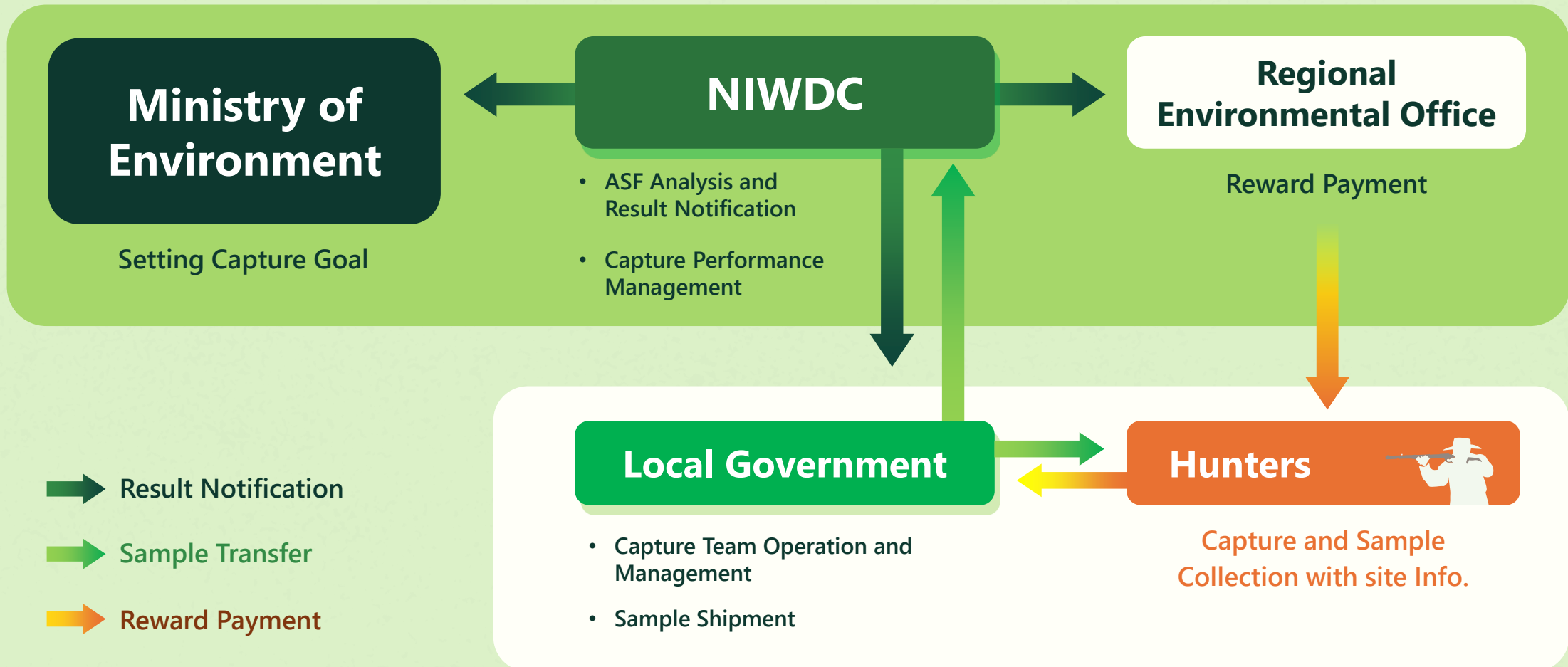# ASF Surveillance and diagnosis (Capture)

Capture

1 Purpose

- ▪ Wild boar population control is essential to block ASF spread.
- ▪ Wild boar samples support ASF detection and disease research.

2 Method & Procedure

A

Capture

Hunters use traps and shotgun to capture wild boars

B

Scientific

Scientific capture tools and techniques are applied.

C

Sampling

Designated sampling teams collect blood and tissue samples during capture following SOPs.

D

ASF diagnosis

Samples are sent to NIWDC for ASF diagnosis with on-line receipt.

E

Rewards

Rewards are paid by Regional Environmental Office based on Reporting

3 **Traditional vs Scientific Capture Methods**

Classical Capture

Hunters

Scientific Capture

Hunting Dogs

Cages

Available in selected area only

Traditional cage trap

Hunting Team

Thermal Drone

GPS Trap

Lower the risk of accident, Allow observation at night

Equipped with GPS receiver and camera
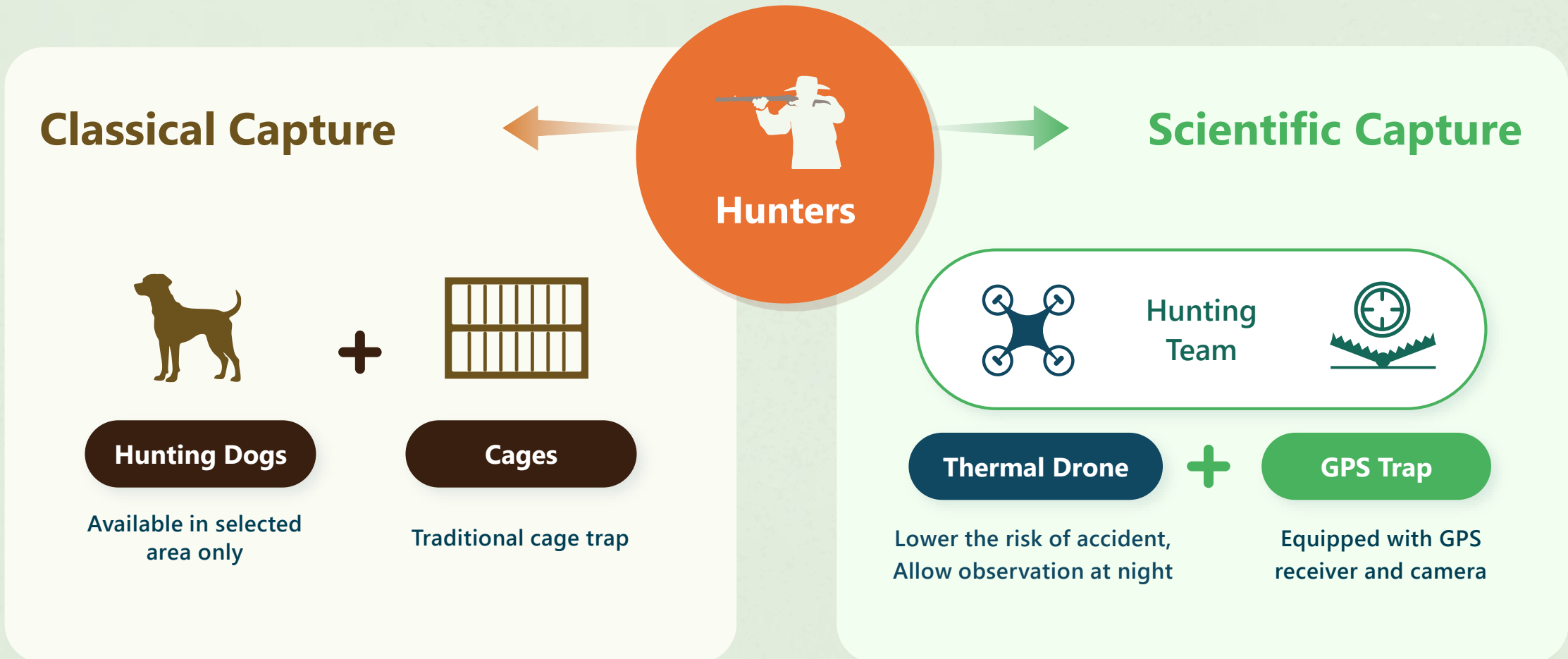
4 **Capture Tools Using Scientific Techniques**

Captured
wild boar in a cage

Net type trap with
attractive bait

Camera and GPS
transceiver

5 **Thermal Drone**

Capture

Drone Team

Observing Wild Boar Habitat Status
(population, locations)

Local Government Permission

Provision of information on wild boar habitat conditions

NIWDC
Assessing & setting observation areas

Provision of current wild boar location information

Hunter
Tracking & Hunting wild boars at the received locations

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6 **Capture Video Using Thermal Drone**

00:00:00:00

● REC

F2.8
HD1080
FPS60

MENU ☰
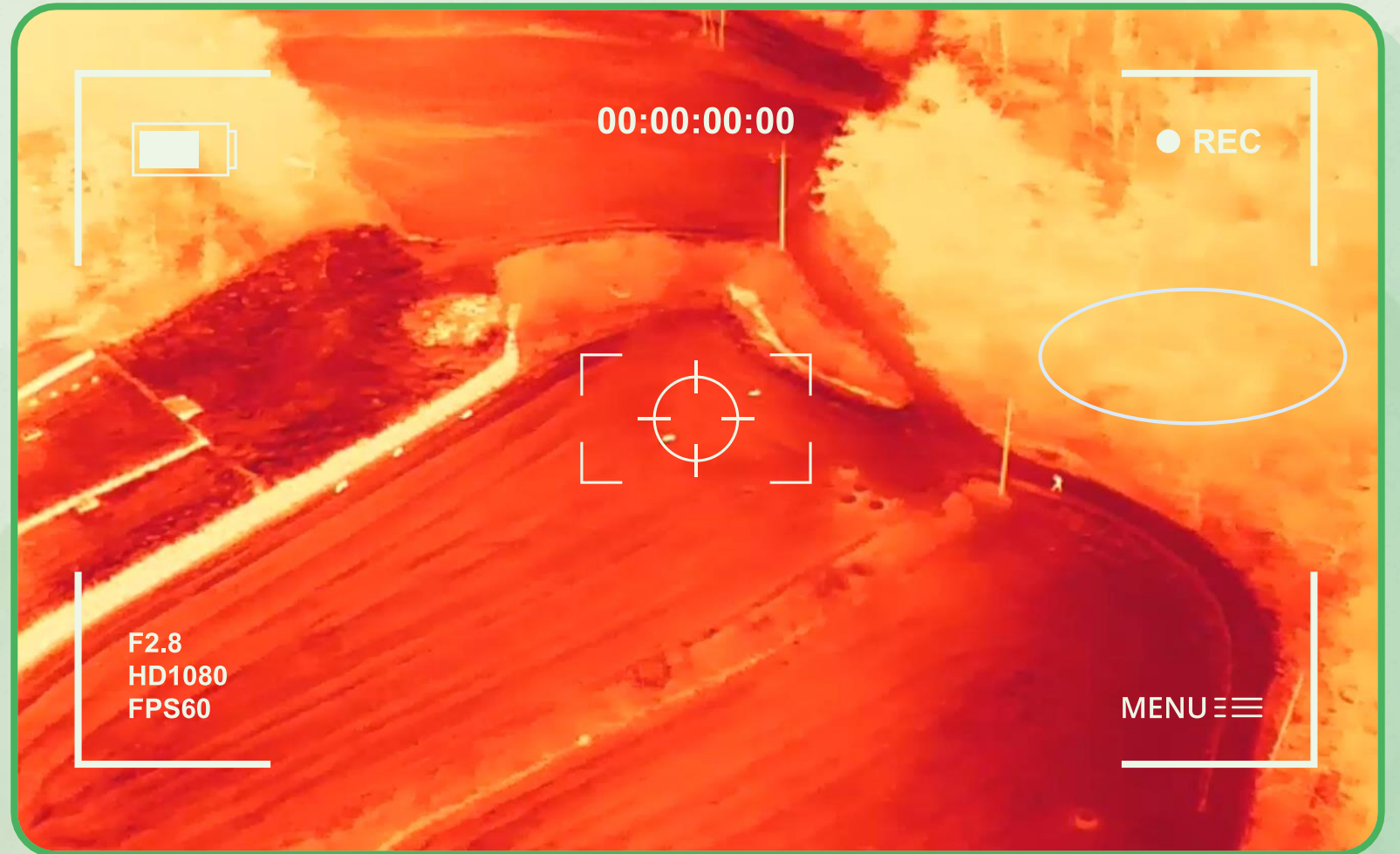
ASF Surveillance and diagnosis (Carcass Search)

1 **Objective**

- Carcass search helps detect infected wild boars early and prevents secondary transmission.
- Prevents environmental contamination by the ASF virus.
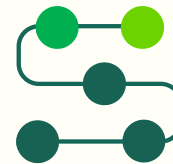
2 **Method**

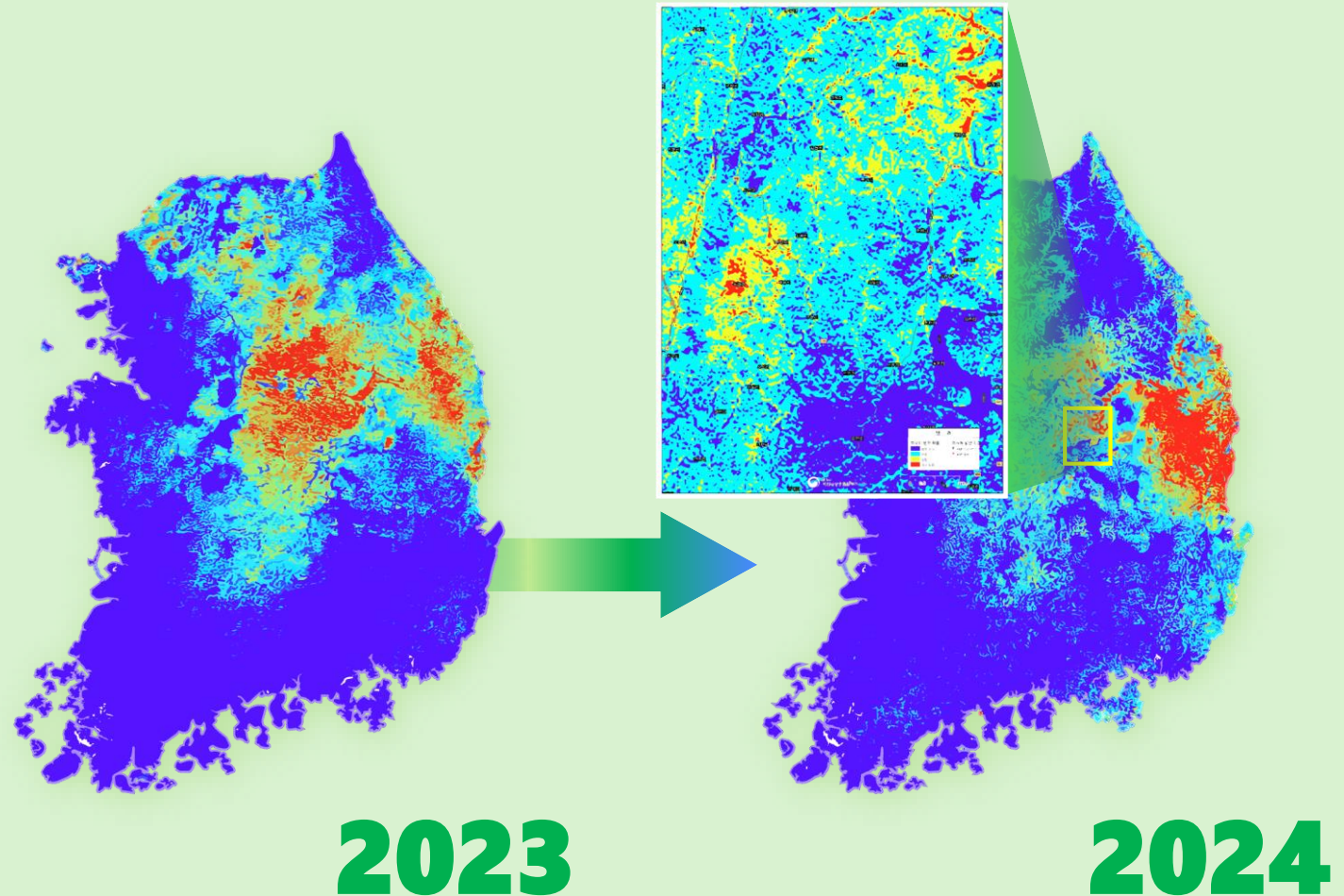| **Maps**	**Deploy**	**Record**	**SOP**
NIWDC selects search areas using "carcass prediction maps".	Search teams and detection dogs are deployed to designated areas.	Location and details are recorded upon carcass discovery.	Carcass disposal is conducted based on SOPs, depending on the situation.

Carcasses

4 **Prediction Map of Wild boar carcasses existence**
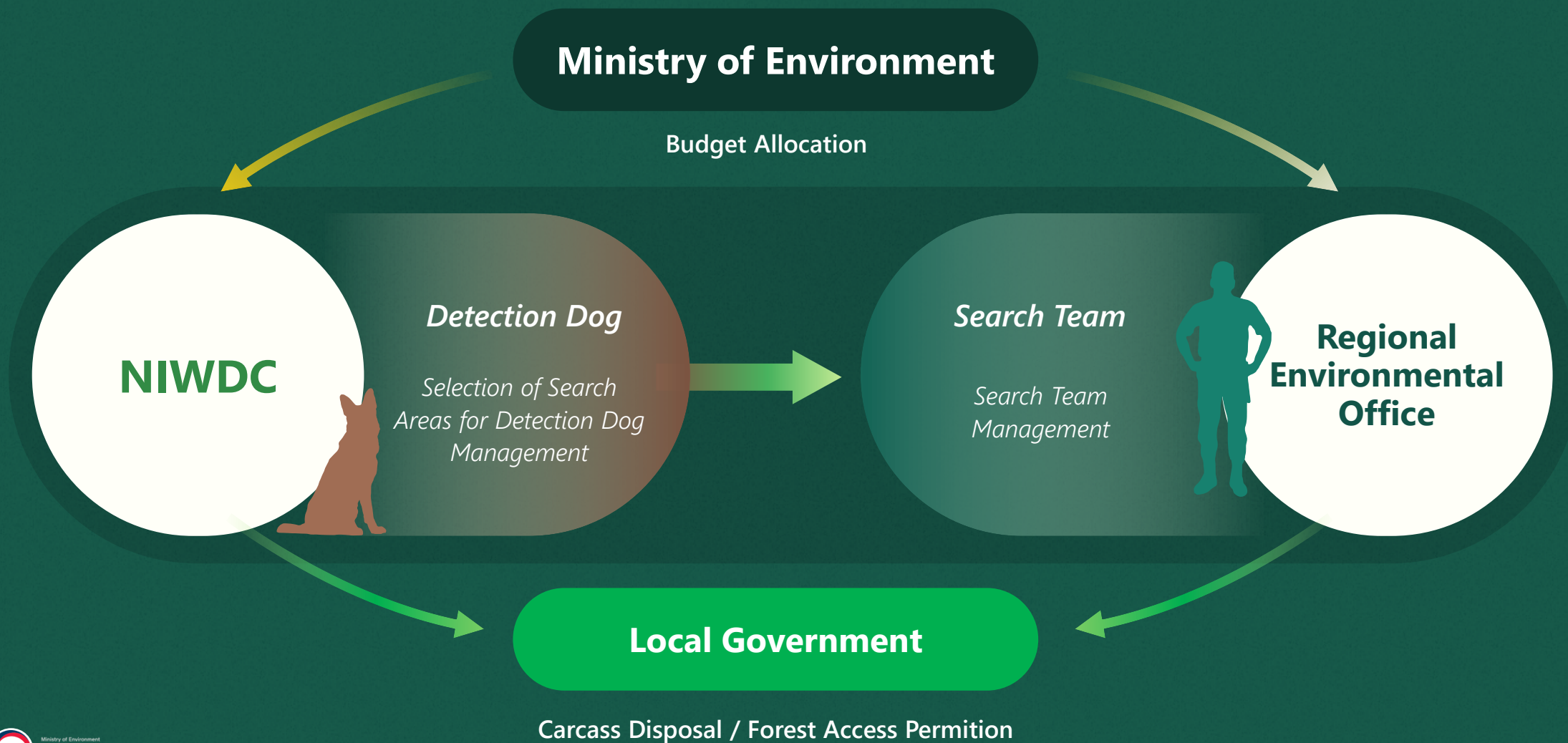
Carcasses

Species Distribution Model (SDM)

- **MaxEnt (One of SDMs)**
- **Carcasses points**
- **24 Environmental variable**

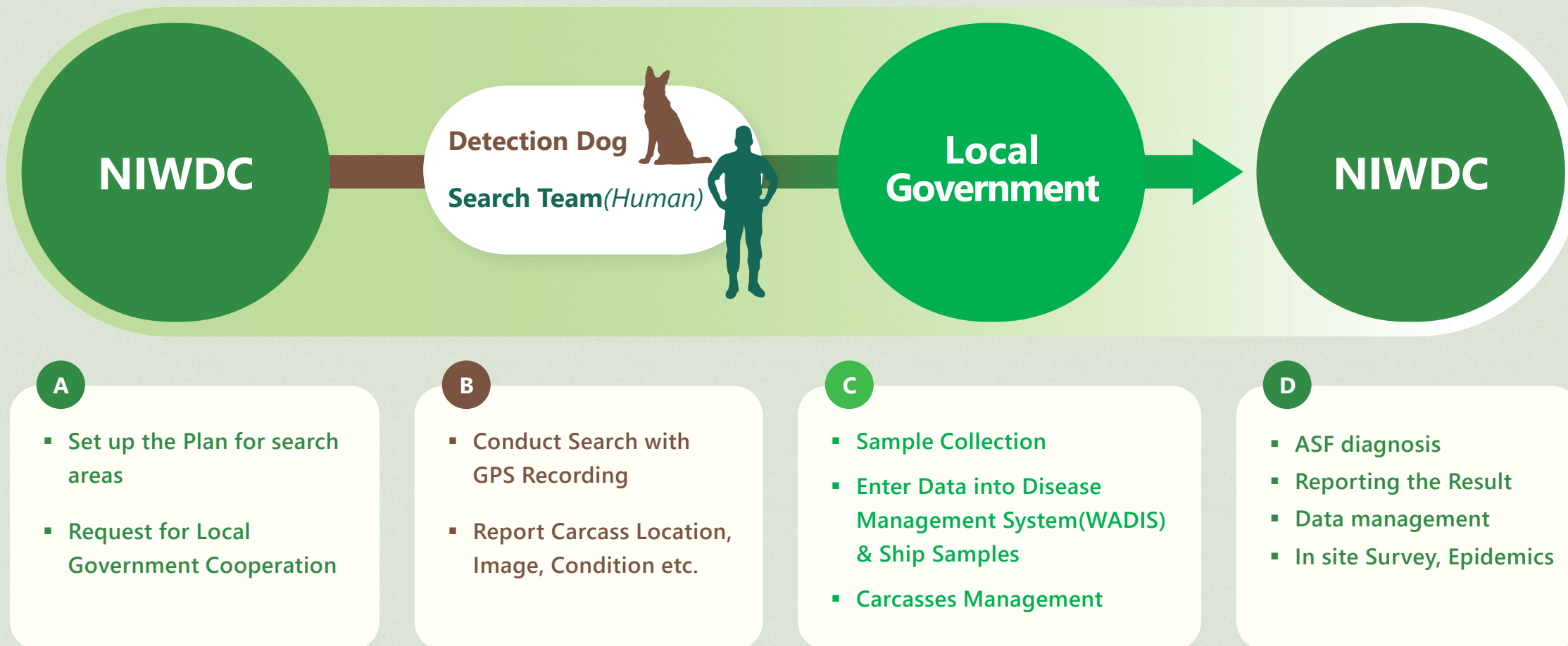*Prediction map is used as basis for planning the carcass search area*

2023

2024

Carcasses

3 **Institutional Roles in Wild Boar ASF Carcass Search**

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Budget Allocation

NIWDC

Detection Dog

Selection of Search Areas for Detection Dog Management

Search Team

Search Team Management

Regional Environmental Office

Local Government

Carcass Disposal / Forest Access Permition

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5 **Carcass Search Mechanism**

Carcasses

NIWDC

Detection Dog
Search Team *(Human)*

Local Government

NIWDC

A
- Set up the Plan for search areas
- Request for Local Government Cooperation

B
- Conduct Search with GPS Recording
- Report Carcass Location, Image, Condition etc.

C
- Sample Collection
- Enter Data into Disease Management System(WADIS) & Ship Samples
- Carcasses Management

D
- ASF diagnosis
- Reporting the Result
- Data management
- In site Survey, Epidemics

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6 **Detection Dog**

Carcasses

- Most carcasses are found in mountainous terrain where visual inspection is impractical

- There are limitations in relying on human eyesight alone to locate them

- NIWDC is currently managing 10 detection dogs
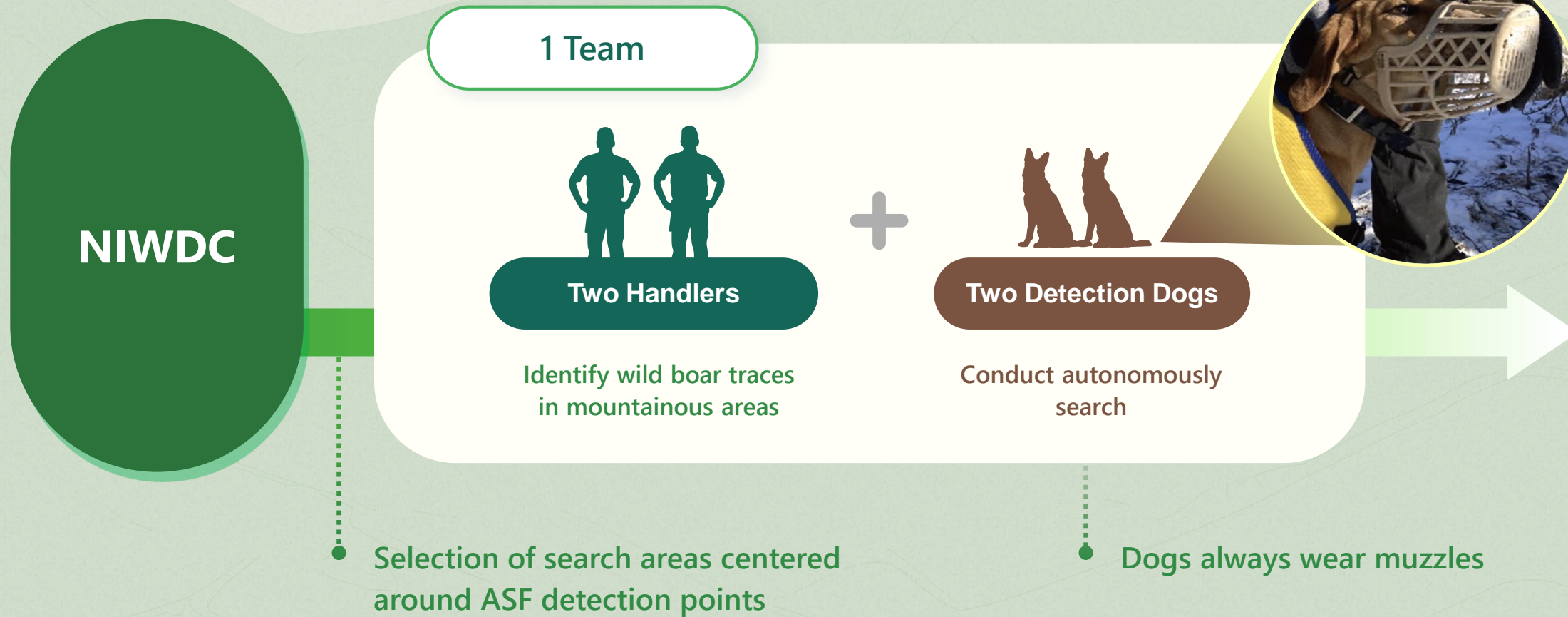
Excellent Mobility in Mountainous Terrain
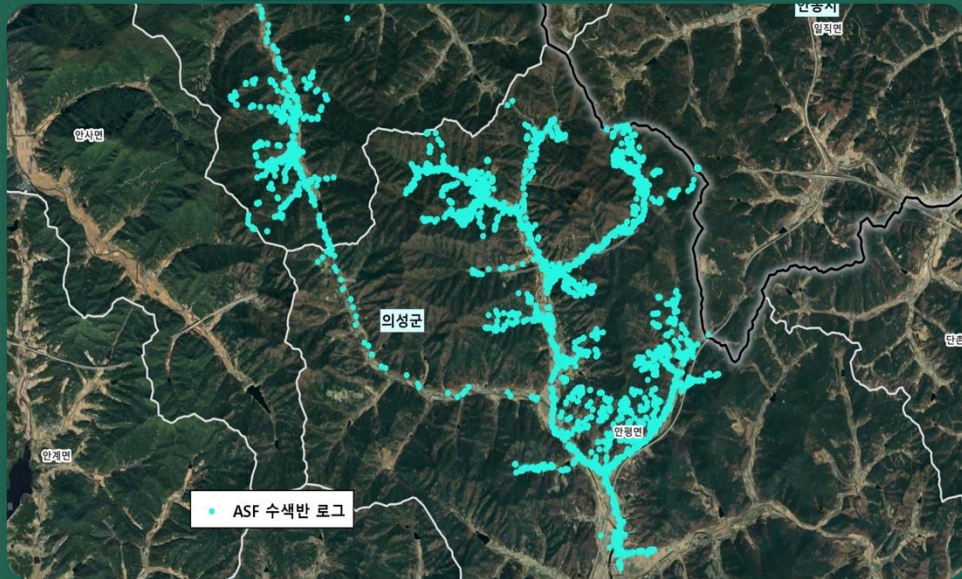
Sensitive Olfactory Responses To Carcasses

7 **Formation of Searching Dog Team**

Carcasses

NIWDC

1 Team

Two Handlers

Identify wild boar traces
in mountainous areas

+

Two Detection Dogs

Conduct autonomously
search

Selection of search areas centered
around ASF detection points

Dogs always wear muzzles

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8 Carcass Searching Dogs Trace by GPS

9 **Detection Dog vs Searcher (Human)**
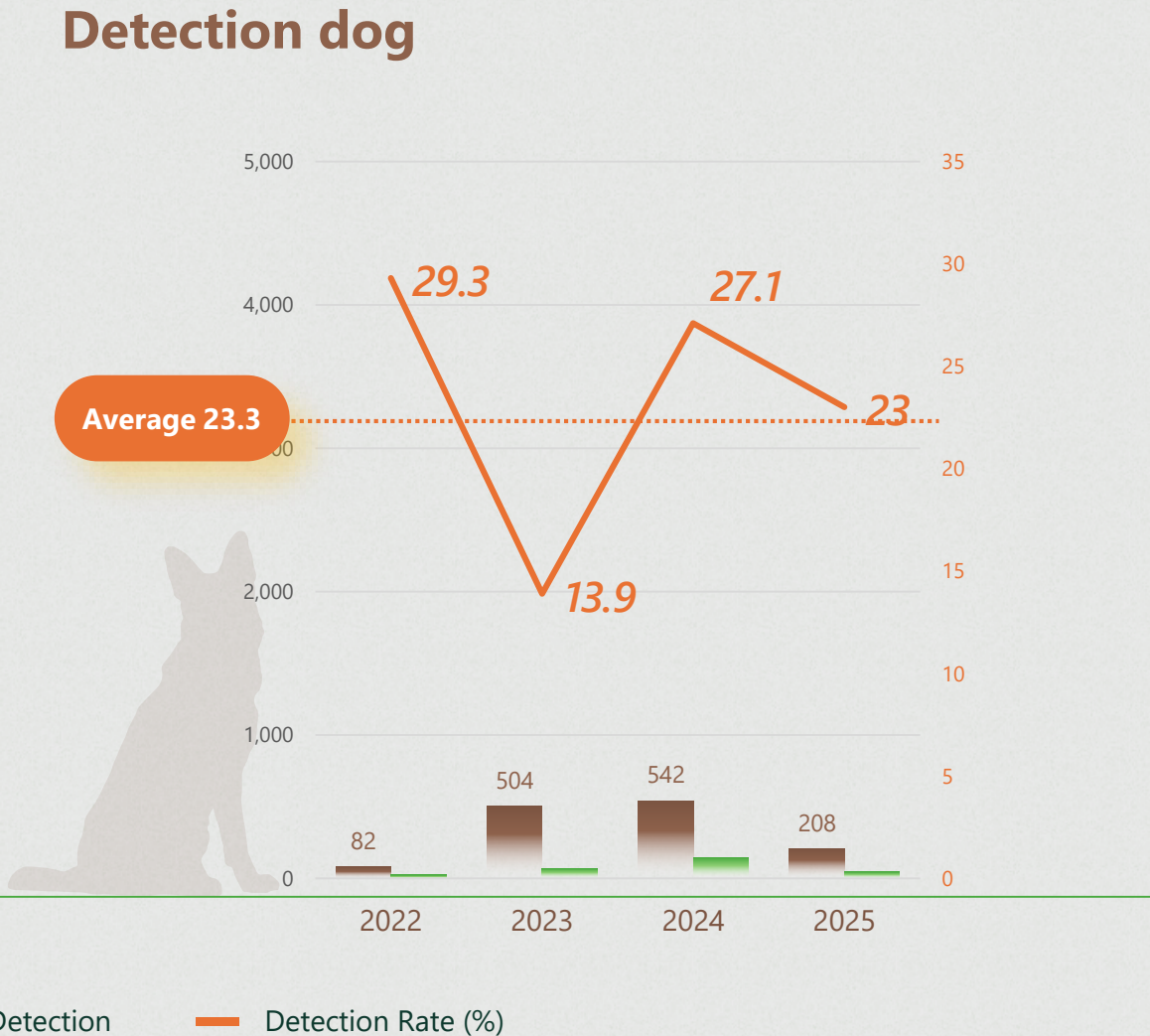

3 months
GPS tracking of **searchers**
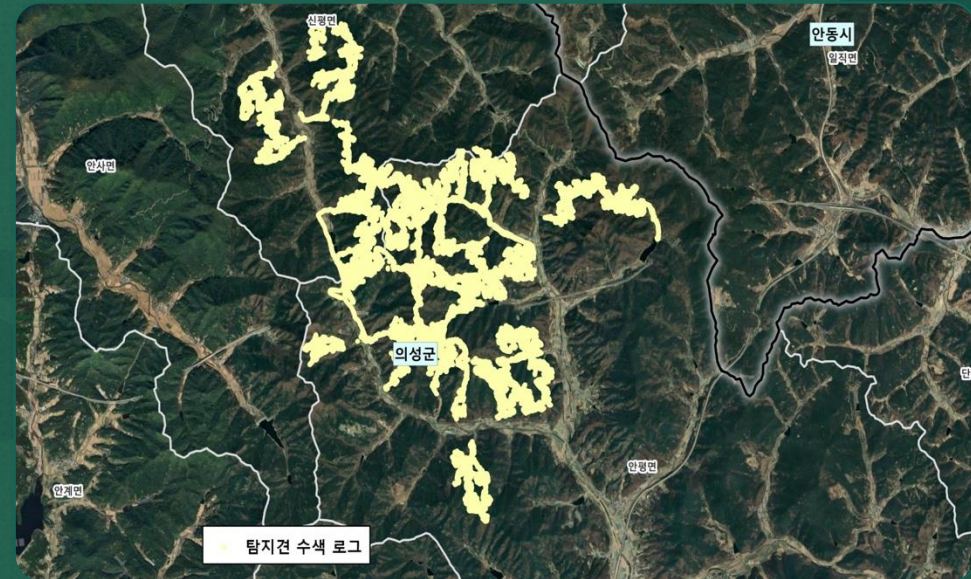
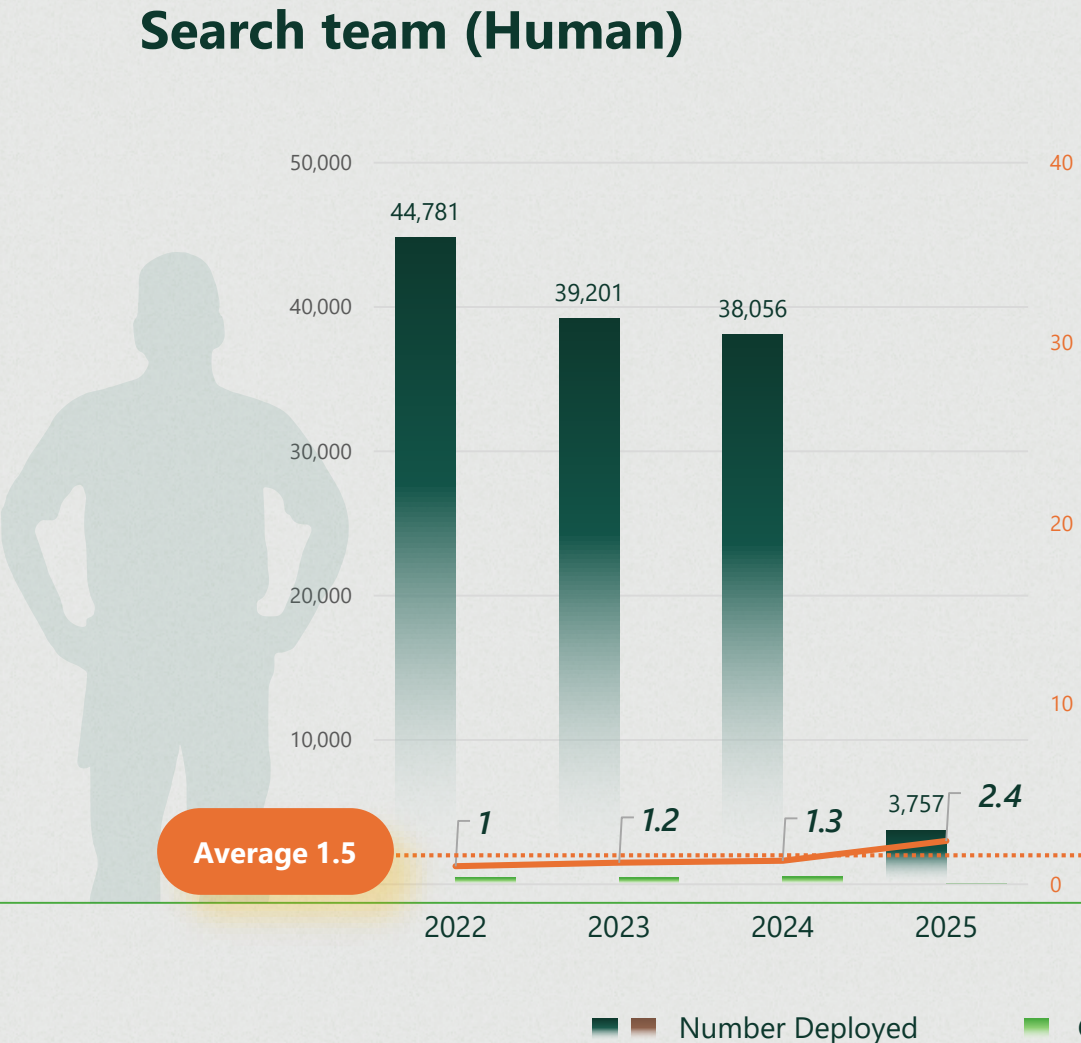# 1 months
GPS tracking of **detection dogs**

* human efforts found 0.01 wild boars per person, searching dogs found 0.16 wild boars per dog

26

11 **Detection Dogs vs Search Teams**

Search team

*Identify wild boar traces
in mountainous areas*

detection dog

Conduct autonomously search

12 Response and Measurement

Clinical symptoms such as Cyanosis, Oral/Nasal/Anal Hemorrhage, Eye Bleeding *(observed within approximately 3 days after death)*, **and surviving individuals do not show Clinical Symptoms**

Damage to carcasses by scavengers, various places of death *(paddy Fields, edge of water, Bushes, etc.)* **and after the dates of death** *(2-100 Days)*

Cases of Typical Clinical Symptoms in Wild Boars
(Within 3 Days of Death)