



Indonesia: Supply Chain Assessment of the National Veterinary Services (NVS) Pilot Program

*Directorate of Animal Health, Ministry of Agriculture
Republic of Indonesia*



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Abstract

Under a collaboration between USAID EPT Program partners, the Food and Agriculture Organization (FAO), and the USAID | DELIVER PROJECT, Task Order 6, the project is providing supply chain technical assistance to the Indonesian Ministry of Agriculture (MOA)/Directorate of Animal Health (DAH). This assistance will strengthen logistics management of animal disease prevention and control supplies for the National Veterinary Services (NVS) pilot program being implemented in three districts of three pilot provinces.

In March 2013, the USAID | DELIVER PROJECT assisted the FAO and the DAH to plan and conduct a supply chain assessment of the NVS pilot program. Specifically, the assessment focused on the DAH supply chain functions for forecasting, financing, procurement, storage, and distribution of the supplies needed to support disease prevention and control activities for highly pathogenic avian influenza (HPAI) and rabies in the three pilot provinces, as well as the current logistics management procedures and DAH staff capacity for managing these supplies.

This report documents the findings and recommendations from the assessment, and discusses the key issues to be addressed with the DAH and FAO to determine the next steps for further technical assistance to

- conduct a storeroom dejunking exercise and introduce the use of stock cards at all levels of the DAH supply chain in the NVS pilot program areas
- assess the information technology environment to identify options for collection and transmission of logistics data and to determine the data management capacity of DAH central level staff and the availability of resources for implementation of a logistics management information system (LMIS) for HPAI and rabies prevention and control supplies in the NVS pilot program areas
- improve cold chain storage and management of vaccines in the NVS pilot program areas.

Cover photo(s): From left to right:

1) Inspecting rabies vaccine vials. Provincial Livestock Services Office. Padang, West Sumatera. March 13, 2013. A. Kusumanegara, FAO. 2) Avian Influenza Virus (AIV) Rapid Antigen Test Kit with lot number and expiration date. Provincial Livestock Services Office. Padang, West Sumatera. March 13, 2013. A. Kusumanegara, FAO. 3) Data collection for the DAH/NVS supply chain assessment. District Livestock Services Office. Agam District, West Sumatera. March 14, 2013. A. Kusumanegara, FAO. 4) Chest-type refrigerator for storing vaccines. Provincial Livestock Services Office. Padang, West Sumatera. March 13, 2013. A. Kusumanegara, FAO. 5) Gloves and other infection control supplies. Provincial Livestock Services Office. Padang, West Sumatera. March 13, 2013. A. Kusumanegara, FAO. 6) Sample collection swabs and Viral Transport Media (VTM). Provincial Livestock Services Office. Padang, West Sumatera. March 13, 2013. A. Kusumanegara, FAO.

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Acronyms

AHC	Animal Health Center (Pukeswan [PKW] in Indonesian)
AI	avian influenza
AIV	avian influenza virus
APBD I	Provincial Revenue and Spending Budget (Anggaran Pendapatan dan Belanja Daerah I in Indonesian)
APBD II	District Revenue and Spending Budget (Anggaran Pendapatan dan Belanja Daerah II in Indonesian)
APBN	State Revenue and Spending Budget – national level (Anggaran Pendapatan dan Belanja Negara in Indonesian)
AusAID	Australian AID organization
CMU	H5N1 Campaign Management Unit (now the Rapid Response Unit)
DAFF	Department of Agriculture, Fisheries and Forestry, Emerging Infectious Diseases program (Australian)
DAH	directorate of animal health
DGLAHS	directorate general of livestock and animal health services
DIC	disease investigation centre
ECTAD	Emergency Centre for Transboundary Animal Diseases
EID	Emerging Infectious Diseases
EPT	emerging pandemic threats
FAO	Food and Agriculture Organization of the United Nations
GOI	Government of Indonesia
H5N1	highly pathogenic avian influenza
IEC	information, education, and communication
IPC	infection prevention and control
IT	information technology
LDCC	local disease control center
LMIS	logistics management information system
MOA	ministry of agriculture
NVS	national veterinary services
PDSR	Participatory Disease Surveillance and Response (for avian influenza)
PIC	person in charge

PPE	personal protective equipment
RAT	rapid antigen test
SIMAK	accounting management information system for government assets (Ministry of Finance)
SIKHNAS	national animal health management information system
iSIKHNAS	integrated SIKHNAS
SMS	short message service (short text messaging)
SOH	stock on hand
SOPs	standard operating procedures
STTA	short-term technical assistance
UPTD	technical implementation unit (regional level)
UPT	technical implementation unit (district and sub-district level)
URC	Rapid Response Unit, formerly CMU (Unit Reaksi Cepat in Indonesian),
USAID	U.S. Agency for International Development
VTM	viral transport media

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Executive Summary

The experience of the National Veterinary Services (NVS) pilot program in integrating highly pathogenic avian influenza (HPAI) and rabies surveillance, prevention, and control activities in three districts will guide subsequent efforts of the Ministry of Agriculture (MOA), Directorate of Animal Health (DAH) to achieve the ultimate goal of strengthening and expanding veterinary services to control all five of the Government of Indonesia (GOI) priority animal diseases (HPAI, rabies, brucellosis, anthrax and classical swine fever [CSF]) in all provinces and districts. Critical to the success of the NVS pilot program will be the ability of the program to efficiently and effectively manage the full range of supplies required to carry out disease surveillance, prevention, and control activities at all levels of the animal health supply chain: central, provincial, district, subdistrict, and community.

This report documents the findings and recommendations from the NVS pilot program supply chain assessment. The findings describe the current policies, procedures, and practices for managing animal health supplies at each level of the DAH supply chain and highlight the key factors affecting the timely availability, quality, and accountability of the products being managed by the program. Short- and medium-term recommendations for addressing the supply chain issues identified are presented, followed by a discussion of the next steps for coordinating further USAID | DELIVER PROJECT technical assistance with the Food and Agriculture Organization of the United Nations (FAO) and the MOA/DAH to implement the proposed recommendations.

Summary of Key Findings

The key supply chain challenges and technical issues affecting the NVS pilot program's ability to effectively and efficiently manage the supplies needed for HPAI and rabies surveillance, prevention, and control include the following:

- **A critical supply chain issue for the DAH/NVS pilot program is that no established data collection or recordkeeping mechanism for routine collection and reporting of essential logistics data on the quantities of usable supplies in stock (stock on hand) or the quantities of HPAI and rabies supplies used (consumption) currently exists at any level of the DAH/NVS supply chain.** Therefore, it is not possible to know the quantities of HPAI and rabies supplies in stock at the Provincial or District Livestock Services or the AHCs at any given point in time, nor is it possible to aggregate and analyze logistics data from the NVS pilot sites to know the stock status of the HPAI and rabies supplies by level or for the DAH/NVS pilot program as a whole. Without timely and reliable logistics data on the stock on hand, movement, and consumption of HPAI and rabies prevention and control supplies at each level of the supply chain, the DAH/NVS pilot program is unable to effectively and efficiently monitor and manage the HPAI and rabies supplies at the NVS program pilot sites.
- **There is no established inventory control system with standardized forms or procedures for ordering, distributing, receiving, storing, and monitoring animal health supplies at any level within the DAH:** Shortages and overstocking of HPAI and rabies supplies were

reported during the supply chain assessment of the DAH/NVS pilot program. Based on the observations and information gathered throughout the assessment, there is no established inventory control system for monitoring the consumption and stock levels of HPAI and rabies supplies at each level of the DAH/NVS supply chain. There is thus no way to identify when it is time to order new supplies to avoid stockouts or recognize when overstocking is occurring and where to report it. There are no written procedures on when to order, how to calculate the quantities of supplies needed, when supplies should be delivered, how supplies should be received into inventory, or how to conduct a physical count and inspection of supplies in stock.

The district or provincial levels typically submit a special request to the DAH central level or to FAO when a stockout is imminent or has already occurred. Unreported overstocking may be taking up limited storage space, thereby risking deterioration and expiration of the supplies, and there is no established mechanism for redistribution of supplies between provinces or districts that may be overstocked from their annual allocations.

- **There are several areas that should be addressed to improve the storage conditions and management of the HPAI and rabies supplies to reduce the risk of deterioration and wastage.** Some of the deficiencies noted in the storage conditions and practices for HPAI and rabies supplies may be easily corrected at the facility level, whereas others may require an authorized cleaning and dejunking exercise to remove and dispose of expired, damaged, or otherwise unusable products according to MOA/government guidelines. For staff to be able to use stock cards correctly, the NVS pilot program will need to undertake the dejunking exercise, followed by cleaning of the storage area and inspection, counting, and reorganizing of the products onto pallets, shelving, or cabinets so that they are easily visible and accessible to the staff. It may be the case that in some situations new storage areas will need to be designated, and shelving or cabinets procured to allow this issue to be effectively addressed.
- **Cold chain storage of vaccines in general, and monitoring of vaccine supplies at the NVS provinces and districts visited, was inadequate.** Stock levels, batch numbers, and expiration dates of vaccine supplies, and vaccine usage rates were not being regularly recorded and monitored at the NVS pilot program sites visited, with a couple of exceptions.

Observations of cold chain storage of vaccines during the assessment included the following:

- Incorrectly placed vaccines within the refrigerators resulting in freezing of vaccines that had to be removed for quality testing
 - Expired vaccines stored together with usable stocks
 - Domestic refrigerators that had been purchased that were not appropriate for vaccine storage
 - Temperature monitoring devices were not available and vaccine cold storage temperatures were not being monitored
 - Maintenance records for cold chain equipment were not available and cold chain equipment was not being properly maintained.
- **The job descriptions of administrative staff responsible for management of HPAI and rabies supplies do not include logistics management tasks or responsibilities, and the**

staff have not been trained in basic stockkeeping practices, collection and reporting of logistics data, or maintenance of proper storage conditions for animal health supplies.

The functions of the administrative staff assigned to manage the animal health supplies at the DAH central level and at the Provincial Livestock Services are more for financial accounting or administrative purposes. To improve logistics management of the HPAI and rabies supplies for the DAH/NVS pilot program, it will be important to assign clear logistics management roles and responsibilities to DAH/NVS staff at each level of the supply chain. Existing job descriptions should be revised to include the specific logistics management tasks of these staff at each level. The DAH/NVS pilot program should document the roles and responsibilities of the staff responsible for logistics management at each level, with instructions on how to correctly perform these tasks in a logistics management standard operating procedures (SOP) manual. The logistics management SOPs would then be used to provide training, monitoring, and supervision to support the rollout and implementation at all levels of the DAH/NVS pilot program.

- **Although there are many factors that may lead to overestimation or underestimation of the quantities of supplies needed for the integrated DAH/NVS pilot program, it is clear that final budget allocations are determined by previous expenditure rates and the amount of funding available, rather than actual supply needs. The use of timely and reliable logistics data in the government planning and budgeting process will help address these issues by improving the accuracy of forecasts, thereby helping to maximize the use of available resources.** Essential logistics data on the quantities of supplies used (past consumption) and the actual quantities of usable supplies in stock (stock on hand) at each facility and each level of the DAH/NVS pilot program supply chain is not routinely collected, reported, or used for forecasting HPAI and rabies supply needs, nor is it used for informing central and local government budgeting and procurement decisions during the government's annual planning and budgeting exercise. Currently, forecasting of HPAI and rabies supply needs is driven by program targets that are based on population data and historical services data, (referred to as "realization rates" such as the number of animals vaccinated, the number of samples collected, or the number of rapid antigen tests conducted in the past year), and available budget. In some cases, other factors that may influence the consumption of supplies (such as seasonal variation and periods of stockouts) may be taken into consideration in the forecasting process.
- **The government's long and inflexible planning, budgeting, and procurement process does not allow for timely delivery of supplies to provinces, districts, and animal health centers (AHCs).** The long government planning, budgeting, and procurement process results in a 12–18 month lead time from the time the annual planning and budgeting exercise begins in March each year, to the time the animal health supplies are procured, delivered, and finally available for use which may not be until August of the following year. This process does not allow for timely procurement and delivery of supplies, and thus threatens completion of planned activities during the year. In addition, annual budget allocations may only be used for a one-time procurement of supplies for the year, which does not allow for any adjustments in the quantities or timing of deliveries that may be required throughout the year to respond to changes in program priorities, realities, or other factors that may affect the demand for supplies. The issue of long lead times is complicated by occurrence of unexpected animal disease emergencies that require large quantities of supplies to be provided rapidly to multiple, often remote, locations.

The required quantities are difficult to estimate, and the required storage locations for rapid access are also difficult to determine ahead of time.

- **Multiple sources of supply and of funding for procurement of animal health supplies complicate the management of supplies in the provinces and districts.** The multiple sources of supply and of funding for procurement of animal health supplies at the different levels of the DAH supply chain complicate monitoring and management of animal health supplies that must be stored and accounted for separately, according to the source of funding that was used to procure the supplies, even if the supplies are the same. For example, supplies procured with State Revenue and Spending Budget–national level (APBN) funds and Provincial Revenue and Spending Budget (Anggaran Pendapatan dan Belanja Daerah I in Indonesian) (APBD I) funds must be labeled, stored, and tracked separately within the same storeroom in a Provincial Livestock Services office.
- **Lack of institutional framework and mandate for national veterinary services.** Constraints to establishing a national veterinary services program include the lack of an institutional framework and mandate for the MOA/DAH central level to be able to coordinate, monitor, and provide technical support for strengthening veterinary services in the provinces and districts. Decentralization of authority and allocation of resources for animal health services to local government levels results in different priorities and models for implementation of veterinary services across provinces and districts, which also complicates the process for integration of services and management of supplies. These constraints will likely also limit the DAH central level role and efforts to implement a logistics management information system (LMIS) and other technical interventions for improving logistics management of animal health supplies at the provincial and district levels.

Summary of Recommendations and Next Steps

The focus of USAID | DELIVER PROJECT supply chain technical assistance will be to support the design and implementation of an LMIS and logistics management SOPs to be implemented at all levels of the DAH/NVS program supply chain and to support the rollout training and implementation of the monitoring and supportive supervision plan to build logistics management capacity within Government of Indonesia animal health services staff and structures that can be expanded to other provinces and districts.

The short-term and medium-term recommendations and next steps for implementation of the proposed recommendations are summarized below.

Short-term Recommendations (6–12 months)

Conduct a Logistics System Design workshop for the DAH/NVS pilot program to develop –

- LMIS data collection and reporting forms and procedures,
 - logistics management procedures,
 - logistics management roles and responsibilities of staff at each level in the supply chain
- Document the LMIS forms and procedures, the logistics management procedures, and the logistics management roles and responsibilities of staff at each level in the supply chain in a logistics Standard Operating Procedures (SOP) manual for the DAH/NVS pilot program

- Assign logistics management roles and responsibilities for staff at each level of the DAH/NVS pilot program
- Conduct training and rollout of the DAH/NVS LMIS and Logistics Management SOPs
- Conduct a storeroom designation, cleaning and dejunking exercise at all levels of the DAH/NVS supply chain and institute the routine use of stock cards for all HPAI and rabies prevention and control supplies
- Provide routine monitoring and supportive supervision to support implementation of the LMIS and Logistics Management SOPs at DAH central level and NVS pilot program provinces and districts
- Strengthen cold chain management and monitoring of all vaccines used for DAH program activities
- Conduct advocacy and socialization on the importance of collecting and using logistics data and following recommended logistics management practices in the NVS pilot program areas

Medium-term Recommendations (1–2 years)

- Strengthen the forecasting methodology for estimating animal health supply needs to include the use of logistics data from DAH/NVS program locations and all levels of the animal health supply chain as the LMIS is expanded to other provinces and districts.
- Incorporate the use of logistics data in the MOA annual planning, budgeting, and procurement process to account for the extended lead time from planning to budget allocation and procurement to final delivery of products to DAH/NVS program locations and other provinces and districts within the animal health supply chain.

Next Steps

The *Next Steps* section of this report provides a detailed discussion and proposal for strengthening logistics management of HPAI and rabies supplies for the DAH/NVS pilot program. Some of the key issues and decisions that will need to be addressed with the MOA/DAH and FAO to determine the timing and next steps for USAID | DELIVER PROJECT technical assistance include the following:

- Assessment of the current information technology (IT) infrastructure, Internet connectivity, and human resource capacity for electronic data entry and reporting at provincial and district levels, and database management at the central level of the DAH/NVS pilot program, to determine the best option for implementation of a computerized LMIS for managing HPAI and rabies prevention and control supplies that could be expanded to include all animal health supplies.
- Agree on the technical scope of work, planning, and resources for the NVS Logistics System Design Workshop to include the workshop goals and objectives, methodology, selection of participants, development of training curriculum and materials, and workshop schedule.
- MOA/DAH review and approval of the NVS pilot program LMIS and Logistics Management SOPs once developed, and authorization for assignment of DAH/NVS staff to perform logistics management tasks as part of their job descriptions.
- Confirm timing and resources for the rollout training of the LMIS and Logistics Management SOPs for management of HPAI and rabies supplies at the DAH central level and NVS pilot provinces and districts to include resources for implementation of the post-rollout monitoring and supportive supervision plan.

Background

The USAID Emerging Pandemic Threats (EPT) Program is supporting a collaboration between the IDENTIFY project and the USAID | DELIVER PROJECT to provide supply chain technical assistance to IDENTIFY partners working to strengthen human and animal disease surveillance, prevention, and control activities at the country level. In Indonesia, the IDENTIFY partner, the Food and Agriculture Organization of the United Nations (FAO), is supporting the Directorate of Animal Health (DAH) in the implementation of the National Veterinary Services (NVS) pilot program in three provinces. The pilot program aims to conduct disease surveillance, prevention, and control activities for animal health in a sustainable model in three districts, one in each of three pilot provinces, that can easily be extended to other districts and provinces by the DAH.

Local government animal health services at the district level will use the NVS program to implement disease surveillance, prevention, and control activities, supported by the DAH and FAO, to control the five priority animal diseases identified by the Government of Indonesia (GOI) (highly pathogenic avian influenza [HPAI], rabies, brucellosis, anthrax, and classical swine fever), with the initial NVS pilot activities to be focused on HPAI and rabies. To promote sustainability, activities of the NVS will be led by government partners with support from FAO. NVS pilot technical standard operating procedures (SOPs) and training modules for the five priority animal diseases are under development.

Advocacy and training of district and provincial veterinary staff to integrate the FAO-supported Participatory Disease Surveillance and Response (PDSR) activities for avian influenza into the functions and responsibilities of local government animal health divisions began in 2012. In addition, former PDSR officers transitioning to become NVS officers have received training to expand their clinical skills to include rabies prevention and control activities, including vaccination, anesthesia, dog handling, and humane euthanasia.

The NVS pilot program is being conducted in three districts of three provinces:

- Klungkung district in Bali province
- Agam district in West Sumatera province
- Dumai district in Riau province

An essential aspect of the NVS pilot program is the timely and adequate provision of supplies and equipment to support disease surveillance, prevention, and control activities by local government veterinary staff in the field. Timely notification of diminished stock levels and efficient delivery of needed goods is critical to the success of the animal health programs at the local government level. The NVS pilot program requires the distribution and replenishment of items including, but not limited to, the items listed in Table 1.

Table 1. Minimum List of Animal Health Supplies for the NVS Pilot Program

Minimum List of Animal Health Supplies for the NVS Pilot Program		
	Storage Considerations	Comment
General		
PPE (personal protective equipment)	None	
Disinfectant	Dark, cool, dry	
Rabies		
Rabies vaccine	Refrigeration and cold chain	
Specialized collars for marking vaccinated dogs	None	
Anesthesia drugs for immobilizing animals prior to humane euthanasia		
Euthanasia solution	Room temperature, locked	**controlled substance
Needles	Locked	
Syringes	Locked	
Highly pathogenic avian influenza (HPAI)		
Rapid antigen test kits for HPAI	Controlled room temperature	Anigen® Type A
Viral transport media (VTM) swabs for sample collection	None	
Universal VTM (with swab) for sample submission	Thermostable 2°–25°C, avoid freezing	

Although it is clear that the operational and logistical aspects will need to fit into the existing local government structure to ensure sustainability, development of standardized logistics management procedures and an accompanying information system are needed to accomplish this. FAO, in collaboration with the USAID | DELIVER PROJECT, proposes to support this development effort in support of DAH and local government partners. Currently, FAO will continue to operate a central warehouse for distribution of some items as above. It is planned that the DAH will take over procurement and distribution of certain items as agreed. Still under discussion is whether provincial governments may take responsibility for provision of certain items. Additionally, other donors may procure and provide items for needed distribution for use in the NVS pilot program areas. The proposed logistics system will need to accommodate these complexities.

The logistics system to support the distribution and replenishment of the required items should allow for the following:

- Integrate with and utilize the existing FAO distribution system
- Utilize existing GOI logistics structures, where they exist and are working well (e.g., local government as indicated above)
- Provide temporary “project mode” logistics functions where local systems are incapable of handling demand, with a view to institutionalizing these as quickly as possible

- Strengthen logistics management capacity within DAH and provincial/district governments to enable eventual GOI implementation and oversight of the logistics system.

What Is a Supply Chain?

A supply chain is a network of people and organizations at different levels that undertake activities required to move products from suppliers to customers. The management of a supply chain involves linking and coordinating the people, resources, activities, and information at each level of the supply chain into a cohesive and coordinated whole.

This diagram is a visual representation of a public health supply chain. In the diagram, the supply chain begins with the funding sources, suppliers of raw materials, and manufacturers at the top, and extends all the way down through the different levels until reaching the end users—the final customers who will actually use the products.

The different levels in the supply chain are connected through the flow of information and the flow of products at each level to improve customer service at all levels with the ultimate goal of ensuring the quality and the availability of products for the final customers.

The purpose of a supply chain is to ensure that the Right Products, in the Right Quantities are delivered to the Right Place, at the Right Time, in the Right Condition, and for the Right Cost to the people that need them—these are referred to as the “Six Rights.” Any missing or poorly functioning links along the supply chain will affect the performance and the ability of the whole supply chain to meet the Six Rights and ensure that quality products are delivered to the people that need them, when and where they need them.

Directorate of Animal Health (DAH) Supply Chain

The supply chain for the DAH begins with the Government of Indonesia (GOI) and donor organizations who commit funding for procurement of the critical supplies the DAH needs to provide the services for its approved programs. In the case of the DAH, it is the Ministry of Agriculture, and the Food and Agriculture Organization (FAO) until recently, that fund the activities and the procurement of supplies for the National Veterinary services (NVS) pilot program currently under way in three districts of three provinces.



Credit: JSI

Figure 1. A Public Health Supply Chain

The next level in the DAH supply chain are the suppliers of the raw materials needed for production of vaccines, medicines, rapid antigen test kits, sample collection supplies, personal protective equipment (PPE), and other animal health supplies, followed by the manufacturers (e.g., Pusvetma for vaccines) that create the final product from the raw materials, and then either sell directly to government health programs, other buyers, or vendors who manage sales and distribution of the products. Farther down the supply chain are the national program managers and policymakers who are responsible for selection and approval of the products to be used by the program and for establishing the policies and protocols on how these products should be managed and used. In addition, program managers at every level of the in-country portion of the supply chain, are responsible for quantifying the supply needs and estimating the cost for procurement of supplies for the program. Program managers' responsibilities include planning, budgeting, and assigning resources for procurement of animal health supplies, as well as monitoring and ensuring that quality products are procured that meet the needs of the program.

At the other end of the supply chain are the central, provincial, district, and subdistrict AHC level management offices and storage facilities that are responsible for receiving, storing, monitoring, distributing, and reporting on the stock levels, movement, and use of the supplies by the final end users. In this case, the end users are the veterinarians and para-veterinarians who use the supplies to treat animals at the Animal Health Centers, or carry the supplies into the communities for use in animal vaccination, sample collection, decontamination, or other disease-containment activities.

Purpose and Objectives

The purpose of USAID | DELIVER PROJECT technical assistance is to support the Food and Agriculture Organization of the United Nations (FAO) and the Directorate of Animal Health (DAH) to strengthen logistics management of highly pathogenic avian influenza (HPAI) and rabies prevention and control supplies for the national veterinary services (NVS) pilot program in three districts of the three pilot provinces through a series of short-term technical assistance (STTA) activities. The first activity was assisting FAO and the DAH to plan and conduct a supply chain assessment of the DAH and local government supply chain functions for forecasting, financing, procurement, storage, and distribution of the supplies needed to support HPAI and rabies prevention and control activities in the three pilot provinces, as well as assess the current logistics management procedures and DAH staff capacity for managing these supplies.

The specific objectives of this technical assistance were the following:

- Conduct an in-country assessment of the DAH supply chain, concentrating on management of the key HPAI and rabies prevention and control supplies, including HPAI sample collection supplies and rapid diagnostic test kits; rabies vaccine, dog collars, anesthesia drugs, euthanasia solution, and consumable supplies; personal protective equipment (PPE); and disinfectant to be supplied to the three pilot districts
- Prepare and conduct a seminar at the Ministry of Agriculture (MOA) on key supply chain management principles and practices for FAO and DAH staff
- Document the assessment findings, recommendations, and proposed next steps in a technical report to be shared with stakeholders and used to inform subsequent technical assistance

This report documents the findings and recommendations from the assessment, and discusses the key issues to be addressed with FAO and the DAH to determine the next steps for strengthening logistics management of HPAI and rabies prevention and control supplies in the NVS pilot program provinces.

Methodology

The in-country portion of the Directorate of Animal Health (DAH)/National Veterinary Services (NVS) pilot program supply chain assessment was conducted March 5–22, 2013. The assessment team members were selected to include representatives from the Ministry of Agriculture(MOA)/DAH, the Food and Agriculture Organization of the United Nations (FAO), and technical advisors and consultants from the USAID | DELIVER PROJECT as follows:

- Dr. Pebi Purwo Suseno, Sub-directorate for Animal Disease Prevention and Control, DAH
- Dr. Retno Widiastuti, Rapid Response Unit (formerly HPAI Campaign Management Unit [CMU]), DAH
- Margaretha Kristanti, National Liaison Officer/Local Government, FAO
- Akbar Kusumanegara, Disease Control Center Data Encoder, FAO
- Denni Rajagukguk, Programme Assistant, FAO (central level support)
- Dr. Anton Widjaya, Consultant, USAID | DELIVER PROJECT
- Juhartini, Consultant, USAID | DELIVER PROJECT

The assessment activities included research and review of relevant animal health policy and technical documents; adaptation, finalization, and translation of the facility interview guides and data collection tools; extensive consultative meetings with DAH and FAO central level managers and staff; visits to the DAH central storage area and FAO central warehouse facilities in Jakarta; and field visits to two of the three NVS pilot provinces. Given certain administrative and travel constraints, field visits were conducted in West Sumatera and Bali provinces only, and included visits to the Provincial and District Livestock Services Offices and selected Animal Health Centers (AHCs) in the pilot districts (Agam District and Klungkung District respectively). It was not possible to visit Riau province and Dumai District.

The purpose of the facility visits was to interview managers and staff responsible for managing the HPAI and rabies prevention and control supplies at each level of the supply chain; to observe storage conditions and stockkeeping practices; to collect logistics data on the highly pathogenic avian influenza (HPAI) and rabies supplies in stock; and to assess staff knowledge and skills in basic logistics management procedures.

Please see *Appendix A. Activity Schedule* for a complete schedule of the assessment team working sessions, consultative meetings, and field visits during this period; *Appendix B. List of Facilities Visited*, which includes the list of staff interviewed at each of the Provincial and District Livestock Services Offices and Animal Health Centers visited; and *Appendix C. List of Stakeholders* for a comprehensive list of all the stakeholders who provided valuable information, guidance, and feedback that was critical to gathering and interpreting the assessment results.

The assessment tools and activities were structured to focus on nine key supply chain areas. The findings in each of these areas are discussed in the following section of this report:

- NVS program organizational structure, policies, and plans
- Financing for HPAI and rabies supplies
- Forecasting HPAI and rabies supply needs
- Government budgeting and procurement processes and timeline
- Distribution system for HPAI and rabies supplies
- Storage conditions and practices
- Inventory management policies and procedures
- Logistics management information system (LMIS) for HPAI and rabies supplies
- Logistics roles and responsibilities of DAH staff at central, provincial, district, and AHC levels

Findings

The findings from the supply chain assessment of the Directorate of Animal Health (DAH)/ National Veterinary Services (NVS) pilot program reflect the range of issues affecting the ability of the NVS pilot program (and by association, the DAH) to efficiently and effectively forecast, finance, procure, store, and monitor the quantities and the quality of the animal health supplies needed to support the NVS pilot program for highly pathogenic avian influenza (HPAI) and rabies prevention and control.

The key findings from the assessment are documented for each of the nine supply chain areas that were assessed March 5–22, 2013.

I. NVS Organizational Structure, Policies, and Plans

The focus of the NVS pilot program is to strengthen Indonesian veterinary services by integrating animal health surveillance, prevention and control activities for the five livestock diseases of national importance, (HPAI, rabies, brucellosis, anthrax, and classical swine fever [CSF]), and building upon the local government veterinary service disease control and prevention capacity developed by the existing Participatory Disease Surveillance and Response (PDSR) system for HPAI response facilitated and supported by FAO since 2006 in response to the H5N1 epidemic in Indonesia.

NVS training modules have been developed, and in 2012 PDSR officers were trained in rabies prevention and control in the three NVS pilot districts (Klungkung District, Bali; Agam District, West Sumatera; and Dumai District, Riau). With waning support from FAO, additional efforts are under way to support transition of the PDSR system into existing government structures by integrating PDSR functions and responsibilities into local government structures, such as the District and Provincial Animal Health Divisions and Sections. Currently, the NVS pilot program is being implemented through the DAH structure with integrated HPAI and rabies prevention and control activities now being provided in the three pilot districts and their associated Animal Health Centers (AHCs).

A. Regulation of the Director General of Livestock and Animal Health Services for Strengthening National Veterinary Services

The Ministry of Agriculture (MOA), comprising the DAH and the Directorate of Veterinary Public Health, is responsible for the organization and management of veterinary services, which includes management and control of the strategic infectious animal diseases and zoonoses, as well as veterinary public health and animal welfare. As reported during the assessment, the failure to enact Law Number 18/2009 on Livestock and Animal Health, which would provide the institutional framework and authority required for the MOA to implement veterinary services at the different government levels (central, provincial, district and subdistrict/AHC), has been a major impediment for the DAH to be able to effectively fund, provide technical guidance, train, and supervise animal health workers, and to conduct program monitoring and evaluation to support animal disease prevention and control activities in the regions.

In the absence of final ratification of Law Number 18/2009, the Director General of Livestock and Animal Health Services (DGLAHS) drafted the Guidelines for Veterinary Services in November 2011, which were reviewed with the directors of all of the Provincial Livestock Services and then disseminated to all districts. This resulted in the selection of three districts and provinces that met the criteria for participation in the NVS pilot program.

The DGLAHS Guidelines for Veterinary Services, until Law Number 18/2009 is enacted, are intended to serve as a reference for implementing veterinary services in the regions and, specifically, to guide implementation in the NVS pilot program areas. In addition, the Guidelines also serve to support the transition of the FAO-supported PDSR system for HPAI surveillance and response to become an integrated community-based system for prevention and control of the five priority animal health diseases.

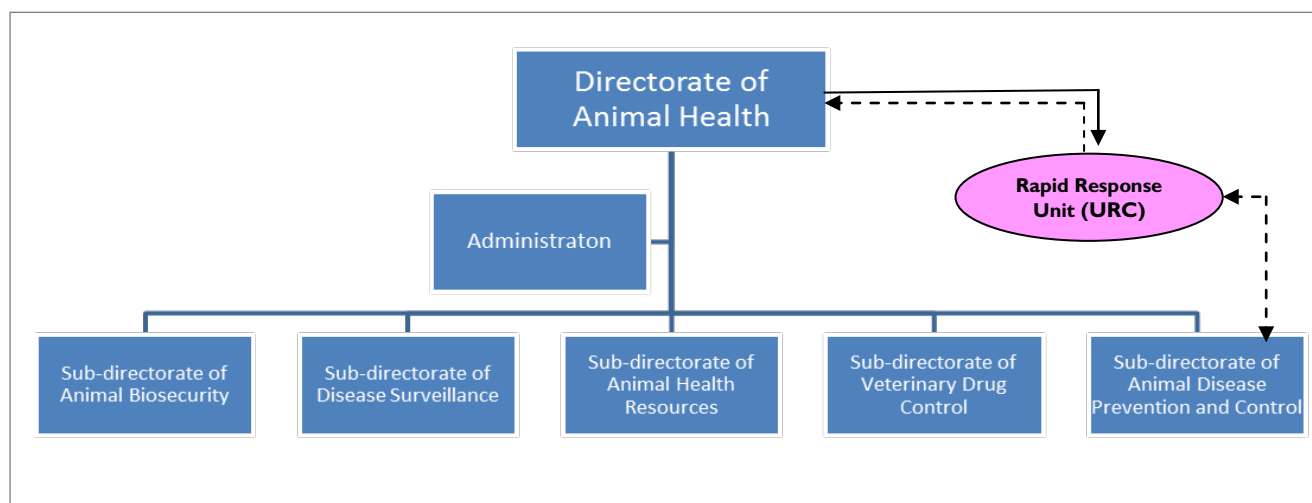
The DGLAHS Guidelines for Veterinary Services are comprehensive and include the need for a funding plan to support the institutional framework, infrastructure, technical implementation, development and management of human resources, monitoring and evaluation, coordination of central and local level budgets, and allocation of a special fund budget for emergency response for disease outbreaks. To adequately plan and budget for procurement and distribution of the animal health supplies that will be needed to support implementation of this new model for integrated veterinary services at the community level as envisioned, and to ensure proper management and accountability for animal health supplies, it will be important to assign logistics management tasks and responsibilities and build logistics management capacity at each governmental level.

B. DAH Structure for Implementation of Animal Health Services

The organizational structure of the DAH at the central level is depicted in Figure 2. The DAH comprises the Directorate Office, an Administration Office, and five sub-directorates. Two of the sub-directorates actually manage and use animal health supplies to support disease surveillance, prevention, and control activities. The Sub-directorate for Disease Surveillance manages supplies specifically for routine surveillance, and the Sub-directorate of Animal Disease Prevention and Control procures and arranges for distribution of supplies for surveillance (AI rapid antigen kits, sample collection kits), for outbreak response (personal protective equipment [PPE]), and to support ongoing animal disease prevention and control activities including vaccination, treatment, disinfection, and decontamination activities throughout the government's Animal Health system. The Sub-directorate for Animal Disease Prevention and Control also procures and manages a central level buffer stock of supplies that can either be accessed by provinces and districts through a special request or used to support emergency response in the event of a disease outbreak.

In addition, the HPAI Campaign Management Unit (CMU)—which was originally created as an ad hoc, functional unit to coordinate international support to the Ministry of Agriculture for HPAI control — has recently been expanded to support rapid response for all five priority animal diseases in Indonesia (HPAI, rabies, brucellosis, anthrax, and CSF), and has been renamed the Rapid Response Unit (or Unit Reaksi Cepat [URC] in Indonesian). The role of the URC is to provide direct support to the field during outbreaks. Otherwise, the URC may provide other services that are not covered by the structural units (the five sub-directorates) within the DAH.

Figure 2. Organizational Structure of the Directorate of Animal Health



Other factors that were cited as limiting the effectiveness of the MOA and the DAH to implement veterinary services relate to decentralization and the regional autonomy of the veterinary institutions, which prohibit a national line of command. This makes it difficult for the DAH at the central level to support a national veterinary services program, because implementation, monitoring, and support of services is dependent on the level of funding, human resources, and the priority given to veterinary services by each province and district. In fact, the level of implementation of animal health services is at the discretion of provinces and districts. Because there is no central mandate for these services to be provided in the provinces or districts, veterinary services may be provided alone, merged with other services (such as fisheries, forestry, marine, horticulture, or agriculture), or not be provided at all at the local government levels.

These challenges to the implementation of veterinary services will likely also affect efforts to implement standardized logistics management procedures for animal health supplies at the provincial, district, and AHC levels. Again, any central level implementation, monitoring, and support for logistics management would be dependent on the agreement and commitment of resources and staff of individual provinces and districts. Therefore, it is expected that these factors will influence the feasibility of some of the recommendations proposed in this report.

C. Technical implementation of Animal Health Services

Animal health services for routine surveillance and for prevention and control of disease outbreaks are provided through local Provincial Livestock Services Offices, District Livestock Services Offices, and subdistrict level AHCs (or Pukeswan [PKW] in Indonesian). Provinces and districts are supported by regional level Technical Implementation Units (UPTDs) and district- and subdistrict-level Technical Implementation Units (UPTs), which are functional units that provide technical and management support, some of which are also direct service delivery units.

There are also eight Disease Investigation Centres (DICs), which are regional laboratories that support the DAH by deploying staff and supplies for sample collection in the districts in the event of disease outbreaks and conducting diagnostic testing.

D. Management of Animal Disease Control Databases

One of the key functions of the CMU, as the FAO counterpart within the DAH during the continuing HPAI epidemic, was to receive and manage HPAI Control Programme data that was being reported through the Participatory Disease Surveillance and Response (PDSR) database developed and maintained by FAO. This included data on HPAI surveillance, investigation, prevention, and control activities reported by districts and provinces. As of the time of this assessment, additional disease control databases and modules, including for rabies control, commercial poultry health, and live bird market surveillance, have been developed in addition to the original PDSR database for districts and provinces to be able to include data on newly developed HPAI and rabies prevention and control activities. In the NVS pilot, the rabies and PDSR databases have been integrated through a shared front-end user interface as part of the effort to integrate implementation and reporting of animal disease control activities, beginning with HPAI and rabies.

One of the key functions of the CMU, as the FAO counterpart within the DAH during the HPAI epidemic, was to receive and manage AI Control Program data that was being reported through the PDSR database developed and maintained by FAO. This included data on avian influenza (AI) surveillance, investigation, prevention, and control activities reported by districts and provinces. As of the time of this assessment, the PDSR database has been adapted for districts to be able to include data on ongoing rabies prevention and control activities as part of the NVS pilot effort to integrate implementation and reporting on HPAI and rabies activities.

With the reduction in FAO support and plans to transfer the expanded PDSR database (now the integrated NVS pilot database) to the DAH, FAO support to the NVS pilot districts over the last year has been focused on developing vaccination protocols and NVS training modules on dog catching, cold chain management, and reporting on rabies cases, which will facilitate incorporating rabies activities into existing AI prevention and control activities. FAO is also supporting field training of PDSR officers in the pilot districts to become NVS Officers.

Although it appears that the URC (now the Rapid Response Unit) will maintain its role to provide direct support to districts in the event of disease outbreaks, it is still unclear where the integrated animal disease control database used in the NVS pilot will be housed within the MOA/DAH. It will be important to establish which staff at each governmental level will have responsibility for reporting NVS disease control data, what data will need to be reported as the NVS program expands, and what the current capacity for database management, data analysis, and decision-making exists at the DAH central level. This will allow a determination of whether the URC, or the structural units (Sub-directorate for Animal Disease Prevention and Control and the Sub-directorate for Disease Surveillance), will ultimately have full responsibility for managing and maintaining the NVS disease control database. The same questions will need to be addressed for any logistics management information system (LMIS) that may be designed to improve management of animal health supplies for the NVS pilot program.

II. Financing for HPAI and Rabies Supplies

There are multiple sources of supply and sources of government funding that can be used for procurement of animal health supplies, including HPAI and rabies prevention and control supplies for the NVS pilot program. In addition, there are mechanisms by which provinces and districts receive direct annual allocations of supplies procured by the central level government or can request

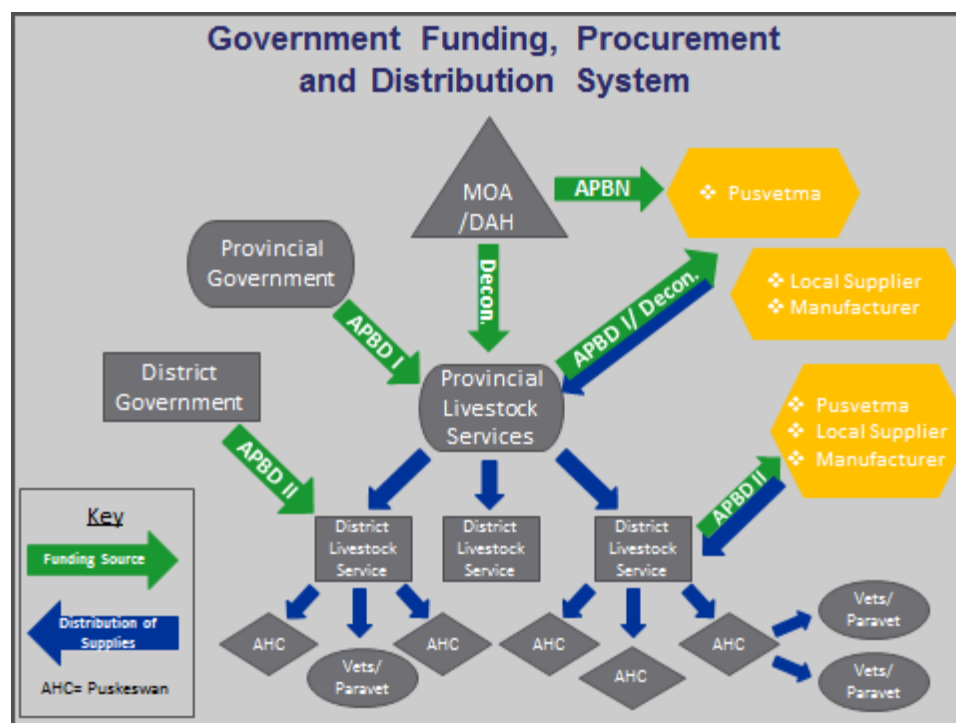
or purchase additional supplies as needed. The different sources of government funding and options for obtaining animal health supplies at each level of the DAH supply chain are described below.

Until this year, FAO was the other major source of funding for procurement of supplies for HPAI surveillance and outbreak response. The current status of the FAO-procured supplies available in-country and how they can be accessed is also described below.

A. Government Sources of Funding for HPAI and Rabies Supplies

Government budgets for animal health services are allocated by the MOA/DAH at the central level and by local governments at the provincial and district levels through an annual planning and budgeting exercise. Please refer to section IV, *MOA budgeting and procurement process and timeline for HPAI and rabies supplies* of this report for a description of the steps and timing of the government annual budget allocation process. Government budget allocations at each level include funding for operational costs, planned activities, and procurement of animal health supplies as needed—which now includes HPAI and rabies prevention and control supplies in the NVS pilot provinces. Each of the government sources of funding is described below and depicted in Figure 3, which shows the different funding streams and distribution channels for animal health supplies that can be procured with government funds at the different levels of the DAH supply chain.

Figure 3. Government Funding, Procurement, and Distribution System for Animal Health Supplies



1. Government budget allocation of APBN funds to MOA/DAH central level for procurement of animal health supplies

State Revenue and Spending Budget–national level (APBN) funds – are the annual government budget allocation to the MOA/DAH central level for animal health services that includes line items for procurement of animal health supplies. The APBN funds are used in two ways for procurement of animal health supplies:

- The MOA/DAH at the central level transfers funding from the annual allocation of APBN funds to the government contracted manufacturer (Pusvetma) to be used for production of vaccines, which are stored at Pusvetma until distributed directly to the Provincial and District Livestock Services Offices upon request. The amount of APBN central level funding transferred to Pusvetma is based on the central level budget allocations for procurement of these supplies for each province. APBN funds are estimated to cover 90 percent of the need for vaccines for the year, and provinces are expected to cover the cost for purchase of the remaining 10 percent needed.

Animal vaccines procured from Pusvetma through this mechanism include vaccines for rabies, HPAI (clade 2.3.2.1), classical swine fever, Jembrana disease, brucellosis, anthrax, and hemorrhagic septicemia

- The MOA/DAH central level also uses APBN funds to procure other animal health supplies that may be procured from Pusvetma or from other manufacturers or local suppliers. These items are received and stored as central level buffer stock at the DAH central offices in Jakarta and are distributed throughout the year in response to special requests from Provincial or District Livestock Services Offices or in the event of an outbreak. At the end of the year, any remaining stocks of these supplies are distributed to provinces. These items include the following:
 - AI rapid antigen test (RAT) kits
 - Sample collection supplies
 - Antibiotics
 - Antiparasitics
 - Vitamins
 - Hormonal drugs
 - Disinfectant
 - Infection prevention and control supplies (gloves, gowns, masks)
 - Consumable supplies (e.g., syringes, needles)

2. MOA central level allocation of deconcentration funds to Provincial Livestock Services

Deconcentration or “Dekon” funds are also central level government funds that are transferred to provincial governments as a budget allocation for the Provincial Livestock Services and include a line item for procurement of supplies. The Provincial Livestock Services prepare their annual workplan and request for “Dekon” funds with the MOA, which is then submitted to the MOA for

approval during the annual planning and budgeting exercise. These Dekon funds may be used to procure HPAI and rabies prevention and control supplies or other animal health supplies if needed.

3. Provincial government allocation of APBD I funds to Provincial Livestock Services

Provincial Revenue and Spending Budget (APBD I) funds are local government funds allocated from provincial government revenues to the Provincial Livestock Services to support animal health services. APBD I funds are allocated to cover operational costs for planned animal health activities and also include a line item for procurement of supplies.

The Provincial Livestock Services have six sources of supply for animal health supplies:

- Central level government allocation of vaccines provided through the government manufacturer, Pusvetma. The Provincial Livestock Service requests these supplies directly from Pusvetma when needed. The quantities of vaccines available at Pusvetma for each province are determined by the central government annual allocation for each province based on the provincial annual planning and budgeting exercise. These supplies are funded from the central government transfer of APBN funds to Pusvetma and are estimated to cover 90 percent of the need for vaccines for the year, and provinces are expected to cover the cost of the remaining 10 percent.
- Animal health supplies that the Provincial Livestock Services procures directly from Pusvetma or other local suppliers using their central level Dekon funds. This has been the method of choice thus far for procurement of internationally-produced vaccine from local distributors for use in provincial rabies elimination programs.
- Animal health supplies that the Provincial Livestock Services procures directly from Pusvetma or other local suppliers using their own APBD I funds.
- The Provincial Livestock Services may request and receive additional animal health supplies from the DAH central level buffer stock through a Special Request in the event of stockouts or product loss due to damage or expiry. The Provincial Livestock Services may also request supplies from the DAH central level buffer stock for distribution to provinces to respond to outbreaks in the districts
- Provincial APBD I funds that are set aside as an emergency response fund that may be used to purchase supplies in the event of an outbreak
- Provincial Livestock Services may also request additional funding from the provincial government at any time during the year in the event of an emergency

4. District government allocation of APBD II funds to District Livestock Services

District Revenue and Spending Budget (APBD II) funds are local government funds allocated from district government revenues to the District Livestock Services to support animal health services. APBD II funds are allocated to cover operational costs for planned animal health activities, and they also include a line item for small purchases of supplies if needed.

The District Livestock Services have three sources of supply for animal health supplies:

- The District Livestock Services receive their annual allocation of supplies from the Provincial Livestock Services. These are supplies that were procured by the province with its APBD I

funds for its districts. These include vaccines, AI RAT kits, medicines, disinfectant, and consumable supplies (syringes and needles).

- The District Livestock Services may request additional supplies from the Provincial Livestock Services throughout the year if needed. These may be supplies already in stock at the Provincial Livestock Services or supplies that the province requests from the DAH central buffer stock if needed.
- The District Livestock Services may use their own APBD II funds to purchase animal health supplies (including vaccines, medicines, needles and syringes) directly from Pusvetma, other manufacturers, or local suppliers. Avian Influenza Virus (AIV) rapid test kits and disinfectant are usually received from the Provincial Livestock Services. Agam District in West Sumatera does purchase vaccines and vaccine supplies with its APBD II funds, whereas in Bali province, districts do not purchase vaccines. Thus, there appears to be significant variation among districts on how APBD II funds may be used.

5. Funding for procurement of HPAI and rabies supplies at the subdistrict level

At the subdistrict level there are three types of animal health facilities (PKW in Indonesian), an AHC; a UPT; or a slaughterhouse. Only AHCs and UPTs have a role in funding or purchasing animal health supplies.

AHCs provide services and receive supplies through the annual allocation of supplies from the District Livestock Services. In addition, the AHC receives its annual operating budget from the District Livestock Services, from which it can make small purchases of consumable supplies if needed.

AHCs cannot request funds directly from a district government. AHCs request their budget from the District Livestock Services for operational costs and purchase supplies through the established government annual planning and budgeting process.

A UPT does not provide animal health services or receive supplies from the District Livestock Services. UPTs provide support for community-level advocacy; information, education, and communication (IEC); and other promotional activities. A UPT does have the authority to request additional APBD II funds from the district government that could be used to purchase supplies for the AHC if needed.

Some AHCs may also be a subdistrict UPT, or there may be stand-alone UPTs that are not linked to an AHC. In addition, not all subdistricts have a UPT or an AHC. The AHCs at the subdistrict level receive supplies from the District Livestock Services, but they are not a UPT with authority to directly request additional budget from the district government if needed. This situation varies by province. For example, in Bali province, all districts have AHCs; however, there are no UPTs or slaughterhouses. (e.g. Minggir AHC in Klungkung District that was visited for the assessment). In West Sumatera province, the AHC visited (Wilayah 1) is both a UPT and an AHC.

6. Animal health supplies issued to veterinarians and para-veterinarians

Veterinarians and para-veterinarians (including PDSR-trained officers and current NVS officers) may receive small quantities of supplies directly from the District Livestock Services office, or from the AHCs from their annual allocation of supplies received from the District Livestock Services. Typically, these items are used for surveillance, vaccination, or other animal disease prevention and control activities in the community. Veterinarians are allowed to collect fees for other types of

animal health services that they provide in the community and to farmers. They are allowed to use to collected fees purchase medicines and other supplies needed.

B. FAO Funding for HPAI Surveillance and Outbreak Response Supplies

FAO provided funding for procurement, storage, and distribution of supplies for HPAI surveillance and outbreak response for the PDSR program from 2006 through the end of 2012. As of January 2013, FAO is no longer providing funding for procurement of animal health supplies other than to support NVS pilot program training activities for integration of HPAI and rabies prevention and control services in the pilot provinces.

HPAI surveillance and outbreak supplies procured by FAO in the past (AIV rapid antigen test kits; PPE kits; disinfectant; and other infection prevention and control [IPC] supplies such as gloves, masks, goggles; and IEC materials) are stored at the FAO warehouse facility in Cipitung, Jakarta, and a smaller storeroom rented by FAO at the Fatmawati post office facility, which also stores computers and office supplies. These stocks may be distributed in response to special requests from provinces and districts via a letter of request to FAO, or they may be accessed for distribution in the event of an outbreak.

C. Funding Gap Analysis

With the reduction in FAO support, the MOA/DAH government budget allocations at central, provincial, and district levels will need to cover 100 percent of all operational costs for planned activities, and for procurement of supplies needed for HPAI and rabies control and prevention activities including the NVS pilot program.

At the time of the assessment, it was not possible to conduct a funding gap analysis to determine if the 2012 government budget allocations will be sufficient to meet the 2013 supply needs for the NVS pilot program or if existing stock levels (as of March 2013) will be sufficient to meet program needs until the 2013 budget allocations and procurements have been completed and supplies have been delivered to the Provincial and District Livestock Services offices and AHCs. (See section IV. *MOA budgeting and procurement process and timeline for HPAI and rabies supplies*).

Logistics data on the actual quantities of supplies in stock (stock on hand), the quantities of HPAI and rabies supplies used (past consumption), and the estimated consumption of supplies for the next year based on planned activities in the provinces and districts would be needed to be able to conduct this analysis (see section III. *Forecasting HPAI and rabies supplies*). This logistics data is not routinely collected and monitored within the DAH supply chain and is a major factor limiting the DAH capacity to effectively and efficiently forecast, finance, procure, distribute, and monitor the availability of animal health supplies—not only for the NVS pilot program but for all Government of Indonesia animal disease control activities.

In one province it was reported that funding for HPAI and rabies supplies is typically insufficient and that procurements are based on 30 percent of the planned annual targets. Targets may also not be met due to human resource constraints (both availability and capacity of staff) in the provinces and districts. In another province, although 100 percent of vaccine needs and close to 100 percent of the drugs and vaccination supplies needed for rabies prevention and control were estimated to be covered by available budget, other items were considered significantly underfunded.

III. Forecasting HPAI and Rabies Supply Needs

The purpose of forecasting HPAI and rabies supply needs is to estimate the quantities of each item that will be needed to support program activities and respond to demand for services in the NVS pilot program areas. Forecasting should begin with MOA/DAH review and approval of the list of essential animal health supplies required to support the integrated HPAI and rabies prevention and control activities, as well as the current protocols and treatment guidelines on how the products should be used. This would include established protocols and guidelines for HPAI and rabies vaccination; field-based sample collection; use of RAT kits; prescribing guidelines for use of antibiotics, antiparasitics or other medicines; and proper use of PPE and other supplies for decontamination or disinfection in the event of disease outbreaks. This information should be used to inform the forecasting assumptions and to support MOA/DAH efforts to ensure correct use of the supplies being procured for the program and the quality of the services being provided.

A. Types of Data and Forecasting Methodology for Estimating HPAI and Rabies Supply Needs

Forecasts of animal health supply needs are prepared during the government's annual planning and budgeting exercise that begins in March of each year. Forecasting is conducted to estimate the quantities of each item that will be needed and to determine the budget allocation for procurement of supplies for the next fiscal year, January–December. Currently, forecasting of HPAI and rabies supply needs is driven by program targets that are based on population data, historical services data (referred to as “realization rates,” such as the number of animals vaccinated, the number of samples collected, or the number of RATs conducted in the past year), and available budget. In some cases, other factors that may influence the consumption of supplies, such as seasonal variation and periods of stockouts, may be taken into consideration in the forecasting process.

Essential logistics data on the quantities of usable supplies in stock (stock on hand) and the quantities of HPAI and rabies supplies used (consumption) at each NVS pilot site is not routinely collected, reported, or used at any level of the DAH/NVS supply chain. The value of the HPAI and rabies supplies in stock that were procured with central or local government funds is reported through the Ministry of Finance accounting system for government assets (referred to as SIMAK for its Indonesian acronym) and is used for financial auditing purposes. These data do not include the quantities of supplies in stock that may have been donated from other sources and do not reflect the actual quantities of usable stock on hand since damaged, expired, or otherwise unusable products are included in these figures. In addition, Provincial and District Livestock Services offices and AHCs may still not have received their supplies from the previous year's budget allocation by the time the annual planning and budgeting exercise starts in March, and they may not know the quantities they are expected to receive. (see section IV. *MOA planning, budgeting and procurement timeline for HPAI and rabies supplies*).

Overstocking that is not reported may result in budgeting and procurement of supplies that are not needed. Provincial and District Livestock Services and AHCs may be overstocked in certain items, either because the quantities that were budgeted and procured the year before were more than what was needed, or because actual consumption was less than expected due to changes in program priorities, lack of operational funds or human resources to carry out planned activities, or other factors.

On the other hand, the use of provincial and district realization rates that may have been lower than expected due to stockouts of supplies during the previous year will underestimate the capacity and

the supply needs to be budgeted and procured for the program. An analysis of consumption trends using timely and reliable logistics data, and of other programmatic factors affecting the use of supplies, would help to improve the current forecasting methodology for estimating NVS pilot program supply needs.

The forecasting methodology for vaccines does not take into account vaccine wastage that occurs through normal vaccination practices and the relatively short shelf life of vaccines. This is a common source of underestimation of vaccine supply needs. An acceptable vaccine wastage rate for each type of vaccine should be determined and added to the quantities needed and the budget allocations for procurement of vaccine supplies for the NVS pilot program.

Although there are many factors that may lead to overestimation or underestimation of the quantities of supplies needed for the integrated NVS pilot program, it is clear that final budget allocations are determined by previous expenditure rates and the amount of funding available rather than actual supply needs. The use of timely and reliable logistics data in the government planning and budgeting process will help to address these issues by improving the accuracy of forecasts and informing government budgeting and procurement decisions to be able to maximize the use of available resources.

IV. MOA Planning, Budgeting, and Procurement Timeline for HPAI and Rabies Supplies

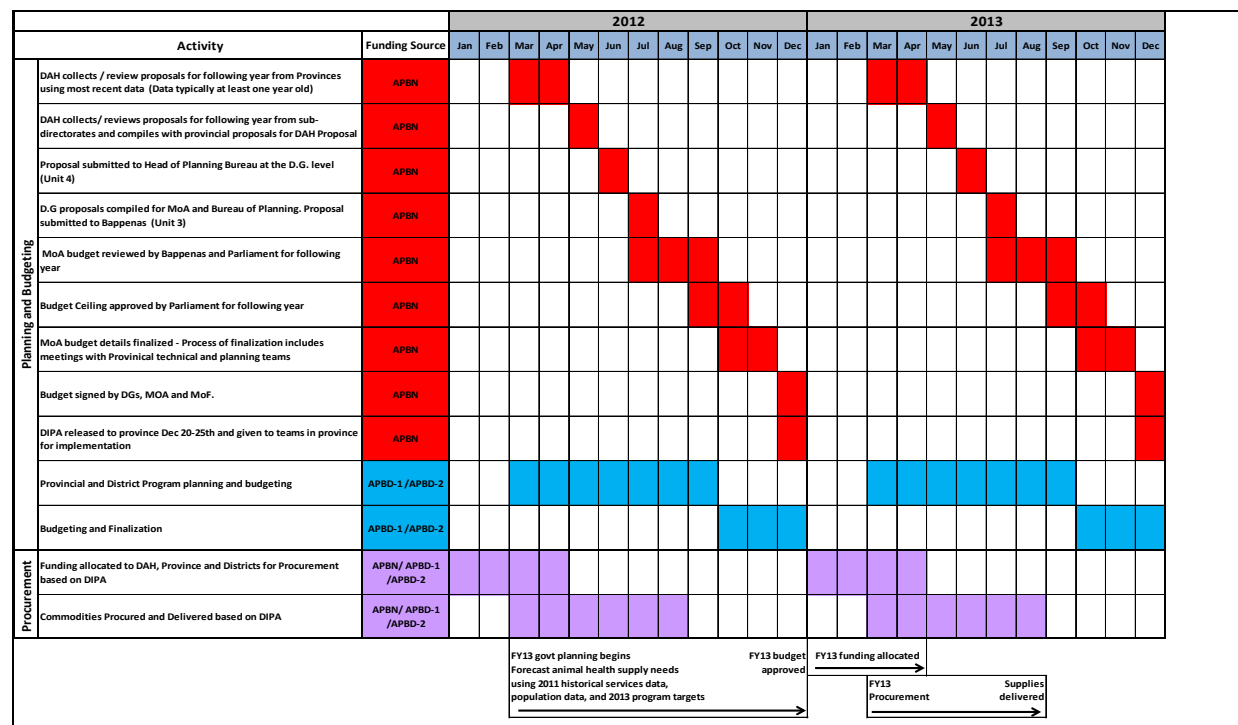
Government of Indonesia (GOI) procurement procedures are standardized across all ministries and all levels of government according to the presidential regulation on Procurement of Government Goods that is updated and reissued annually by the Ministry of Finance. Therefore, the MOA at the central level, and the local government livestock services at the provincial, and district government levels, follow the same procedures and timeline for budgeting and procurement of all animal health supplies procured with government funds. This includes the annual budget allocations for procurement of HPAI and rabies supplies for the NVS pilot program for which the Government of Indonesia is now the sole source of funding (i.e., since FAO no longer provides support for these supplies).

Key features of the government planning, budgeting, and procurement process and timeline that significantly limit the ability of the DAH/NVS pilot program to ensure timely availability of the right quantities of HPAI and rabies prevention and control supplies to support planned activities at the NVS pilot sites include the following:

- Government budget allocations may only be used for a one-time annual procurement of supplies
- Once the annual budget allocations have been approved, it is very difficult to make changes in the list of items or the quantities of supplies to be procured (this is only possible under exceptional circumstances)
- There are no options for partial procurements or staggered deliveries to be able to adjust the quantities or the timing of deliveries throughout the year. This does not allow the NVS pilot program to efficiently or effectively manage the supplies to respond to changes in program priorities and other factors that may affect the demand for supplies. Higher or lower than expected consumption of HPAI and rabies supplies may lead to stock imbalances, including stockouts or overstocking, that cannot be corrected under these conditions.

- The exception is the vaccines procured from Pusvetma with central government APBN funds. Provincial and District Livestock Services may request vaccine supplies from Pusvetma when needed and for the quantities needed based on their approved annual allocation for vaccines. This allows provinces and districts the flexibility to accommodate the relatively short shelf life of these products to ensure their use before expiration.
- As depicted in Figure 4 (readers may also refer to Appendix G. MOA Planning, Budgeting, and Procurement Timeline of this report), the timeline for the government's annual planning, budgeting, and procurement process may span an 18-month period starting in March each year and ending with the final delivery of supplies to provinces, districts, and subdistrict AHCs as late as August the following year.
 - In March or April, the annual planning and budgeting exercise for all types and levels of government funding begins. The timeline for APBN funds is indicated in **RED**, and the timeline for provincial APBD I and district level APBD II funds is indicated in **BLUE**.
 - In December, all APBN, APBD I, and APBD II budget allocations that can be used for procurement of animal health supplies are approved.
 - Between January and April of the following year (timing varies among provinces and districts), all APBN, APBD I, and APBD II budget allocations for procurement of supplies are released to the DAH central level and to Provincial and District Livestock Services, indicated in **PURPLE**.
 - Between March and August of the following year (timing varies among provinces and districts), procurement of animal health supplies begins. Finalization of the procurement process and delivery of supplies occurs at the earliest in March and, in some cases, as late as August, also indicated in **PURPLE**.

Figure 4. MOA Planning, Budgeting, and Procurement Timeline



Due to the long lead time and limited flexibility of the government's annual planning, budgeting, and procurement process, which can last from 12–18 months until supplies are finally distributed and available for use at Provincial and District Livestock Services and AHCs, planning for the next year's government budget allocations which starts in March or April, may occur at a time when provinces and districts may still not have received their budget allocations or begun procurement of supplies with the previous year's funds.

One additional consequence and drawback of the government's long planning, budgeting, and procurement process is that, in the example illustrated in Figure 4, when the annual planning and budgeting exercise started in March 2012 for the following fiscal year (January–December 2013), historical services data on “realization rates” from 2011 were used to inform the forecast of the quantities of supplies needed for FY 2013. These supplies will not be received and available for use in the Provincial and District Livestock Services and AHCs until between March and August of 2013, by which time the program realities and needs may have changed significantly from 2011.

An additional finding reported during the assessment was that the operational budgets at the Provincial and District Livestock Services are not coordinated with the timing of procurements and distribution of supplies to the District Livestock Services and AHCs to be able to carry out planned activities. For example, although there may be funds to undertake a vaccination campaign, there may not be sufficient supplies available at the time to carry out the campaign. Conversely, although the necessary supplies may be available in stock, the operational budget may not be sufficient to carry out the activity.

Overall, the lengthy government planning, budgeting, and procurement process does not allow for timely procurement and delivery of supplies to be able to complete planned activities during the year. By the time the budget allocations for the year are received (between January and April) and procurements have been completed with delivery to Provincial and District Livestock Services and finally to AHCs (between March and August), the program priorities, realities, and resources available to conduct activities may have changed, and the supplies may no longer be what is needed. In addition, because supplies procured during each fiscal year are only available for use during part of that fiscal year, local governments may intentionally procure supplies during one fiscal year in order to hold over those supplies for use in implementing disease control and prevention activities from January – July of the next fiscal year.

V. Distribution System for HPAI and Rabies Supplies

Multiple mechanisms for distributing or picking up HPAI and rabies supplies are used between the central and provincial levels, the provincial and district levels, and the district to AHC levels, which include the use of Provincial or District Livestock Services vehicles, personal vehicles of staff—often motorbikes, and public transport.

A. Distribution of Government Funded and Procured HPAI and Rabies Supplies

There is no established distribution schedule for delivery of government-funded supplies to the provincial and district levels, no budget allocation for fuel or vehicle maintenance, and no designated staff responsible for distribution of HPAI and rabies supplies. In some cases, distribution of supplies may be covered by suppliers for direct delivery to provinces but not to the district or AHC levels. Therefore, distribution usually occurs on an ad hoc basis, when district staff travel to the Provincial Livestock Services office for another other reason, and take advantage of being there to

pick up their supplies from the annual budget allocation. The same is also true between District Livestock Services offices and the AHCs, where distribution of supplies depends primarily on travel of the AHC level staff up to the district using local operational budget if available or, frequently, their own personal transport.

For distribution of cold chain items, supplier contracts may not include requirements to utilize temperature monitoring devices to ensure the quality of cold chain items during transport. In addition, provincial and district level staff who may be delivering these items are not trained to monitor the status of items that require cold chain during transport. These factors may compromise the quality of the cold chain items when they are received at the provincial, district, and subdistrict levels.

B. Distribution of HPAI and Rabies Supplies from DAH Central Level Buffer Stock and FAO Central Storage Facilities

DAH central level buffer stock

Animal health supplies for the DAH central level buffer stock are procured with APBN funds each year and stored in the DAH administrative offices in Jakarta. These supplies may be distributed to Provincial or District Livestock Services throughout the year by submitting a letter of special request to the DAH in the event of a stockout, disease outbreak, or other emergency event. Although both Provincial and District Livestock Services may submit special requests for supplies directly to the DAH, Provincial Livestock Services often place the request for the districts and then arrange for distribution. It was unclear if there are established criteria, written procedures, or other documented instructions for Provincial and District Livestock Services to know how to request supplies from the DAH central buffer stock.

DAH central level buffer stocks remaining at the end of year are usually distributed to Provincial and District Livestock Services. Distribution of the remaining central level buffer stocks may occur without consulting with Provincial or District Livestock Services to verify the quantities of supplies they already have in stock or whether the provinces and districts will have sufficient demand or capacity to use the supplies before their expiration dates. In some instances, Provincial and District Livestock Services may already be overstocked, or they may lack storage space and be unaware that they will be receiving additional supplies.

FAO central level stocks of HPAI surveillance and outbreak response supplies

HPAI surveillance and outbreak supplies procured by FAO in the past (AIV RAT kits; PPE kits; disinfectant; and other IPC supplies such as gloves, masks, aprons, goggles; and IEC materials) are stored at the FAO warehouse facility in Cipitung, Jakarta, and a smaller storeroom rented by FAO at the Fatmawati post office facility which also stores computers and office supplies. These stocks may be distributed in response to special requests from Provincial and District Livestock Services via a letter of request to FAO, or they may be accessed for distribution in the event of an outbreak.

During the initial emergency response to HPAI, disease control supplies, including AIV rapid tests and decontamination supplies, were distributed directly to the district and provincial livestock services participating in the DAH-FAO HPAI Control Programme with allocations based on review of available poultry population and outbreak data in agreement with the HPAI Campaign Management Unit (CMU) (now the Rapid Response Unit [URC in Indonesian]). Following these initial distributions, a stock and consumption reporting system was designed, with assistance from the former John Snow, Inc./DELIVER Project, and district focal persons were assigned by each

participating district to report on the stock levels of supplies provided by FAO. Due to poor adoption of the stock reporting system, FAO and CMU would directly contact district and provincial offices to determine remaining stock and forecast supply needs.

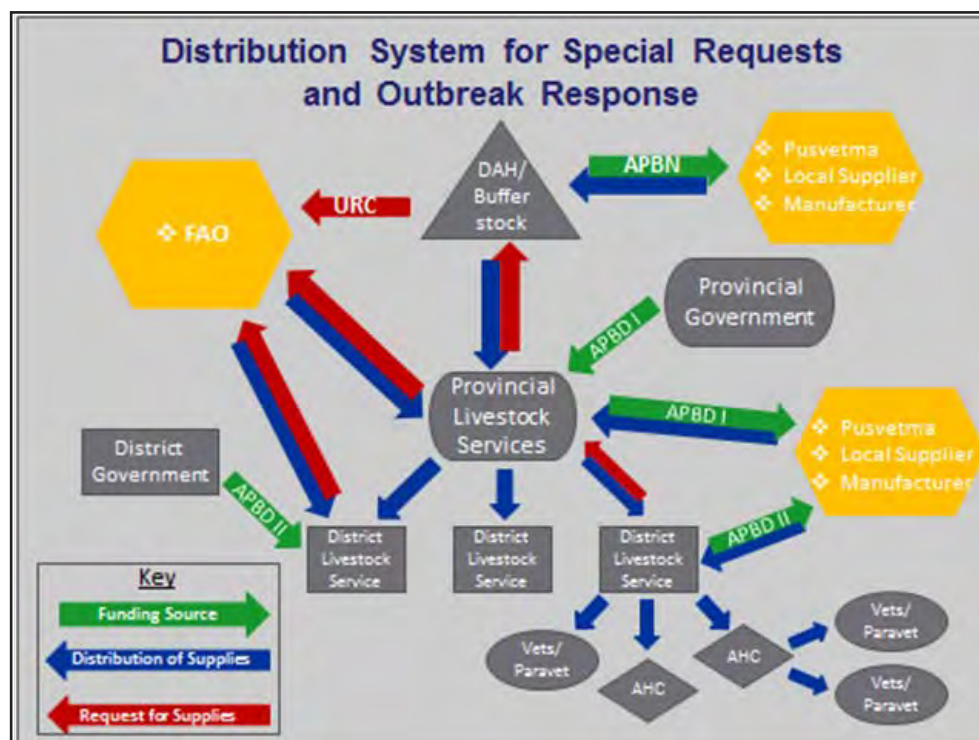
Letters of request for HPAI surveillance and outbreak supplies procured by FAO could also be submitted to the Rapid Response Unit (URC in Indonesian), previously the HPAI CMU, for approval and for the URC to be able to monitor and mobilize support in the event of a disease outbreak. At the time of the assessment, it was learned that requests may also be submitted directly to FAO, with a copy to the URC, and that approval from the URC to issue FAO supplies in response to a special request is not required. For other types of products (e.g. sample collection supplies and consumables), the Provincial and District Livestock Services may submit a letter of special request directly to the DAH. At the time of the assessment, it was not clear if District Livestock Services was aware that they may place a special request for supplies directly to the DAH central level or to FAO.

The DAH central level and the Provincial and District Livestock Services are not informed about the specific items and the quantities of supplies in stock at the FAO storage facilities that could be provided to the NVS pilot program provinces and districts. Clear guidance on the criteria to be able to access these supplies was not available, and established procedures for requesting these supplies in the event of stockouts, outbreaks in the districts, or other emergency events are not formally documented and disseminated to the lower levels.

On the other hand, it was observed that supplies identified as “General Items (Regular Stock)” in the FAO warehouse inventory records in Cipitung include a broad list of infection control supplies, (biohazard bags, waste bins, soap, sprayers), PPE (aprons, shoe covers, coveralls, rubber boots and gloves, PPE kits of different sizes), cold chain items (cooler boxes and bags), and other consumable items that may be distributed across projects and could be distributed to the DAH/NVS pilot program if needed. Other items in stock in the FAO warehouse that were procured for specific projects may also be allocated to other projects with the approval of the person in charge (PIC) and donor of each project.

Figure 5 represents the different distribution channels for requesting and receiving HPAI and rabies supplies from FAO, the DAH central level buffer stock, or the Provincial Livestock Services through a special request or for outbreak response.

Figure 5. Distribution System for Special Requests and Outbreak Response



VI. Logistics Management Information System (LMIS) for HPAI and Rabies Supplies

A critical supply chain issue for the DAH/NVS pilot program is that currently no established data collection or recordkeeping mechanism for routine collection and reporting of essential logistics data on the quantities of usable supplies in stock (stock on hand) or the quantities of HPAI and rabies supplies used (consumption) exists at any level of the DAH/NVS supply chain. Therefore, it is not possible to know the quantities of HPAI and rabies supplies in stock at the Provincial or District Livestock Services or at the AHCs at any given point in time, nor is it possible to aggregate and analyze logistics data from the NVS pilot sites to know the stock status of the HPAI and rabies supplies by level or for the DAH/NVS pilot program as a whole.

Without timely and reliable logistics data on the stock on hand, movement, and consumption of HPAI and rabies prevention and control supplies at each level of the supply chain, the DAH/NVS pilot program will not be able to effectively and efficiently monitor and manage the HPAI and rabies supplies at the NVS program pilot sites. Nor will it be possible to use this data to improve the accuracy of the annual forecast of supply needs or better inform central and local government budgeting and procurement decisions (see section III. *Forecasting HPAI and rabies supply needs*).

A. Stock on Hand Data

On the days of the visits to the Provincial and District Livestock Services and AHCs, the assessment teams were not able to confirm which HPAI and rabies supplies were in stock, nor the quantities of the items in stock, without conducting a physical count of the supplies. Stock cards are not used to

track the movement of supplies or to maintain an updated record of the stock on hand (the quantities of each item in stock). HPAI and rabies supplies are stored in multiple locations in the facilities and are not organized or clearly marked to facilitate their identification when needed for distribution, use, or counting.

At the Provincial and District Livestock Services, some staff were using a type of stock card or a log book to document receipt of the annual allocation of supplies, but these records were not being routinely or correctly updated to reflect the actual stock on hand after each transaction or use of the supplies, or to document the expiration dates of the animal health supplies in stock at the facility.

From the information collected during the assessment, it appears that the only time that information on the HPAI and rabies supplies is reported is during the semi-annual and annual financial audits of government assets conducted for the Ministry of Finance. At that time, the value in rupiahs of the animal health supplies in stock at the DAH central level, the Provincial and District Livestock Services, and the AHCs is calculated based on the quantities of supplies estimated to be remaining in stock after the annual allocations and any special requests have been distributed, but this is financial information, not logistics data, and it is not reported to the MOA/DAH. This data is not sufficient for logistics management purposes because it does not represent the actual quantities of supplies in stock from a physical count or an updated stock card, it does not include the quantities of supplies in stock that may have been donated from other sources, and it does not reflect the actual quantities of usable stock on hand since damaged, expired, or otherwise unusable products in the storeroom are included in these figures. In addition, at the time of the financial audit, the Provincial and District Livestock Services and AHCs may still not have received their supplies from the previous year's budget allocation; therefore the quantities of supplies expected to be received would also not be reflected in the financial audit report.

At the central levels of the FAO-supported HPAI control supply chain, stock on hand data for donated HPAI surveillance and outbreak supplies is recorded on manual stock cards at the FAO warehouse in Cipitung and the Fatmawati Post Office storeroom. Centrally managed electronic stock cards are used to monitor the stock balances and expiration dates of HPAI supplies at both locations, and the supplies are also tracked by the different projects for which they were procured.

Basic stockkeeping practices and appropriate use of stock cards was observed at the Fatmawati storeroom. Standardized, printed stock cards were being used to record logistics data and update the stock on hand of the supplies in the storeroom, including expiration dates and any losses or adjustments due to damaged or expired products that had been removed from inventory. All HPAI supplies were clearly labeled and arranged on shelves for easy identification and management within the storeroom. A physical count and review of the product packaging and expiration dates in the Fatmawati storeroom confirmed that the actual quantities of supplies in stock, all stock transactions, and losses/adjustments to inventory were being correctly recorded and updated on the stock cards. The Fatmawati storeroom manager is assigned specific responsibility for ensuring proper storage conditions and monitoring and reporting on the status of the supplies in the storeroom. Consequently, FAO's Fatmawati storeroom could serve as a model for implementation at the Provincial and District Livestock Services and AHCs.

The DAH central buffer stock items are entered into an Excel spreadsheet and updated when the annual allocation of animal health supplies is received and when supplies are distributed to Provincial or District Livestock Services upon special request, to respond to an outbreak, and at the end of year when the DAH distributes the remaining buffer stocks. The DAH central level receives

no information on the actual stock levels, movement, or consumption of these supplies at the provincial and districts levels once they have been issued from the DAH central level.

The DAH central level stock manager also maintains electronic stock cards on the quantities of vaccines and medicines that were procured as central level buffer stock but are physically stored at the manufacturer (Pusvetma) or other suppliers to be distributed to the provinces and the districts; for example, rabies vaccines and veterinary medicines. The suppliers should send a copy of the airway bill to the DAH central stock manager after supplies are issued to the Provincial or District Livestock Services to confirm the transaction so that the DAH central stock manager can update the electronic stock records. The courier services contracted by the suppliers should also be supposed to submit a copy of the proof of delivery to the DAH central stock manager. Delays of up to 3 months in submission of these transaction documents do not allow the DAH central level to maintain its stock records up to date, because provinces and districts do not report the quantities of supplies received directly from suppliers to the central level.

B. Consumption Data

Essential logistics data on the actual quantities of supplies used (consumption) is also not captured or used at any level of the DAH/NVS supply chain. Consumption is the quantity of supplies actually used by Provincial or District Livestock Services or Animal Health Centers to carry out HPAI and rabies prevention and control activities, or the quantities issued directly to veterinarians and para-veterinarians to conduct HPAI and rabies prevention and control activities in the community. Consumption data are critical for monitoring the quantities of supplies used to determine how long current stocks will last and to be able to take action to avoid stockouts and overstocking, which can lead to loss of products due to expiration or deterioration.

C. Design of a Computerized LMIS for the DAH/NVS Pilot Program

Discussions about the options for the design and implementation of a computerized LMIS for the DAH/NVS pilot program centered around the need to assess the current information technology (IT) infrastructure, Internet connectivity, and computer skills of provincial and district level staff for electronic data entry and reporting of logistics data at the DAH/NVS pilot program sites, and DAH central level capacity to manage an LMIS database. In addition, it will be necessary to design the computerized LMIS such that the logistics data may easily be exported to the integrated national animal health management information system—the integrated national animal health management information system (iSIKHNAS)—being developed with support from the Australian Department of Agriculture, Fisheries and Forestry (DAFF) Emerging Infectious Diseases EID program to link the multiple animal health information systems that currently collect and report laboratory data and field surveillance data into one central database.

For a more detailed discussion of the potential options and next steps for designing and implementing a computerized LMIS for the DAH/NVS pilot program, please refer to the *Recommendations* and *Next Steps* sections of this report.

VII. Inventory Management Policies and Procedures

Shortages and overstocking of HPAI and rabies supplies were reported during the DAH/NVS pilot program supply chain assessment. Based on the observations and information gathered throughout the assessment, there is no established inventory control system with standardized forms or procedures for ordering, distributing, receiving, storing, and monitoring animal health supplies at

any level within the DAH (central or local government livestock services provincial, district, or subdistrict levels). Monitoring and reporting on animal health supplies is limited to semi-annual or annual financial audits of the value of the items in stock that were procured with government funds (see section *VI. Logistics management information system (LMIS) for HPAI and rabies supplies*), but this information is not provided to the MOA/DAH.

Typically, annual allocations of supplies that are procured with central and local government funds that are largely determined by available budgets, are “pushed” to the Provincial Livestock Services and then, in turn, provincial allocations are distributed or “pushed” in the same way to District Livestock Services without information from the district or AHC levels on the actual quantities of supplies in stock or consumption of the HPAI and rabies supplies to know which supplies are needed, when supplies are needed, and how much is needed. There are no standard procedures for determining what quantities of each item should be kept in stock, when it is time to order new supplies to avoid stockouts, or how to recognize when overstocking is occurring and where to report it. The local government levels typically submit a special request to the DAH central level or to FAO when a stockout is imminent or has already occurred. Unreported overstocking may be taking up limited storage space, thereby risking deterioration and expiration of the supplies, and there is no established mechanism for redistribution of supplies between provinces or districts that may be overstocked from their annual allocations.

Current government financial auditing practices require that supplies procured from different government sources of funding—for example, supplies procured with central level APBN funds versus APBD I provincial government funds that are stored in the same Provincial Livestock Services storeroom—be separated, labeled, and managed by different assigned staff, even if the supplies are the same.

An exception was one subdistrict AHC visited, where a physical count of rabies vaccines is conducted daily and the head of the AHC has estimated a minimum stock level of 1 month for all HPAI and rabies supplies. The AHC orders supplies from the District Livestock Services on a somewhat regular basis, which varies for different supplies. For example, vaccines are ordered every 2 weeks, and other medicines and PPE supplies are ordered every 1 to 2 months based on maintaining a minimum of 1 month of stock. This AHC is located close to its District Livestock Services office and has a budget to cover fuel costs, so distribution is not a constraint to monthly ordering and collection of supplies from the district.

VIII. Storage Conditions and Practices

Given the current storage conditions and practices observed during the NVS pilot program supply chain assessment, there are several areas that should be addressed to improve the storage conditions and management of the HPAI and rabies supplies to reduce the risk of deterioration and wastage:

- HPAI and rabies supplies are generally stored in offices or other areas not designed or equipped for storing vaccines, pharmaceutical products, or other medical supplies
- Items are often stored in multiple locations throughout the facility, including on shelves, in cabinets and drawers, and on the floor in offices, hallways, and other open areas
- Available storage space is not utilized efficiently; cleaning and reorganizing the supplies in an orderly way (e.g., alphabetically or by product type or size) on appropriate shelving or other storage furniture would help to maximize available space

- Medicines (e.g., antibiotics, antiparasitics, hormonal drugs) are stored together with disinfectants and other non-medical supplies such as furniture, broken computers and computer parts, old paper files, and paper supplies
- Anesthesia drugs and euthanasia solution should be stored in a locked cabinet or drawer with access by authorized personnel only
- Staff assigned to manage storerooms have not been trained in basic stockkeeping and storage practices, and written guidelines or procedures for proper storage of medicines and medical supplies are not available
- Some storerooms were dirty, dusty, and lacked sufficient ventilation. Air conditioning units installed in storerooms were not functioning or not being used
- Boxes were piled high, disorganized, and crushed so that staff could not locate or reach the supplies
- Some items had been repackaged from the original boxes and were not labeled such that the contents could not be identified
- Fire-extinguishing products or equipment were not available.

Some of the deficiencies in storage conditions and practices noted may be easily corrected at the facility level, while others may require an authorized cleaning and de-junking exercise to remove and dispose of expired, damaged or otherwise unusable products according to MOA/government guidelines if they exist. For staff to be able to begin to use stock cards correctly, the NVS pilot program will need to undertake the de-junking exercise followed by cleaning of the storage area, and inspection, counting, and re-organizing of the products onto pallets, shelving, or cabinets, so that they are easily visible and accessible to the staff.

Sensitization and training of staff on the proper storage and management of animal health supplies is recommended to protect the packaging and quality of the supplies, and ultimately, ensure the quality of the animal disease prevention and control services being provided.

IX. Cold Chain Storage and Management of Vaccines

Although vaccines were not a primary focus of the NVS pilot program supply chain assessment, it was evident that cold chain storage of vaccines in general, and monitoring of vaccine supplies at the NVS provinces and districts visited, was inadequate. Stock levels, batch numbers, and expiration dates of vaccine supplies, and vaccine usage rates were not being regularly recorded and monitored at the NVS pilot program sites visited, with a couple of exceptions.

Although the volume of cold storage space was sufficient in one of the Provincial Livestock Services visited, the findings on storage of vaccines included the following:

- Incorrectly placed vaccines within the refrigerators, resulting in freezing of vaccines that had to be removed for quality testing
- Expired vaccines stored together with usable stocks
- Domestic refrigerators that had been purchased that were not appropriate for vaccine storage (e.g., transparent glass doors that had to be covered)

- Temperature monitoring devices were not available, and vaccine cold storage temperatures were not being monitored. In one instance where there was a thermometer, there was no temperature monitoring chart, and cold storage temperatures were not being recorded or monitored
- Maintenance records for cold chain equipment were not available, and cold chain equipment was not being properly maintained

At the time of the assessment, there was a shortage of cold storage space for vaccines at both the provincial and district levels in one province. Available refrigerators were already overfilled, beyond the recommended capacity, and vaccines had been exposed to subzero temperatures. Additional cold storage space that had been available from the distributor was also no longer available, and a large delivery of vaccines from the FY2013 allocation was pending. However, this appears to be a coping mechanism for ensuring sufficient vaccine stock is available for the planned mid-2013 vaccine campaign in light of the expected late delivery of the FY2013 allocation. Thus, the province expects that storage space will be available once the FY2013 vaccine arrives later in 2013.

It will be critical for the NVS pilot program to implement standard procedures throughout the supply chain to improve monitoring and maintenance of cold chain equipment for storage and transport of all vaccines for animal health, and for proper monitoring and reporting on vaccines in stock to be able to ensure the quality and effectiveness of the vaccines being used for HPAI and rabies prevention and control, and for other animal health activities.

X. Logistics Roles and Responsibilities of DAH/NVS Staff

At the DAH central level, the stock manager is an administrative staff person who is assigned to manage animal health supplies procured with APBN or deconcentration funds for the annual allocation to the Provincial Livestock Services and to manage the DAH central level buffer stock. A key responsibility of the stock manager is to report the total value in rupiahs of the supplies in stock to the Ministry of Finance for the government accounting information system (SIMAK for its acronym in Indonesian) every 6 months. This task is for financial accounting purposes rather than logistics management. The actual quantities of usable supplies in stock (the stock on hand) is not counted, inspected, and reported; rather, the total rupiah value of government procured supplies is calculated based on the quantities of supplies estimated to be remaining after the annual allocations and special requests have been distributed. Any expired, damaged, or otherwise unusable products still in storage are reported as supplies in stock in terms of the value in rupiahs.

At the provincial level, administrative staff are assigned responsibility for managing all supplies and equipment for the Provincial Livestock Services. This includes office supplies, furniture, and equipment, as well as the vaccines, RAT kits, drugs, consumables, and other supplies for HPAI and rabies. At the Provincial Livestock Services, a separate stores manager or “goods treasurer” is assigned responsibility for managing all supplies procured with APBN or deconcentration funds, and another “goods treasurer” is assigned to manage the supplies procured with APBD I funds from the provincial government. These administrative staff are assigned to receive, store, and report on the value of the supplies in stock twice a year to the government accounting management information system (SIMAK) in the same manner as the DAH central level stock manager.

The functions of the administrative staff assigned to manage the animal health supplies are more for financial accounting or administrative purposes. The job descriptions of administrative staff do not include logistics management tasks or responsibilities, and the staff have not been trained in basic

stockkeeping practices, recording and reporting of logistics data, or maintenance of proper storage conditions for animal health supplies.

To improve logistics management of the HPAI and rabies supplies for the DAH/NVS pilot program, it will be important to assign clear logistics management roles and responsibilities to DAH/NVS staff at each level of the supply chain who will be responsible for monitoring and managing these supplies. Existing job descriptions should be revised to include the specific logistics management tasks of these staff at each level. The DAH/NVS pilot program should document the roles and responsibilities of the staff responsible for logistics management at each level, with instructions on how to correctly perform these tasks in a logistics management standard operating procedures (SOP) manual. The logistics management SOPs would then be used to provide training, monitoring, and supportive supervision to support the rollout and implementation at all levels of the DAH/NVS pilot program.

For a detailed discussion and proposal for strengthening logistics management of HPAI and rabies supplies for the DAH/NVS pilot program, please refer to the *Recommendations* and *Next Steps* sections of this report.

Recommendations

The recommendations from the national veterinary services (NVS) pilot program supply chain assessment are summarized below to address the key supply chain technical issues identified during the assessment. Although this assessment focused on the supply chain for managing highly pathogenic avian influenza (HPAI) and rabies prevention and control supplies for the integrated NVS pilot program, these recommendations are also valid for management of all Government of Indonesia animal health supplies.

Short-term recommendations (6–12 months)

1) Conduct a Logistics System Design Workshop for the DAH/NVS pilot program

Conduct a Logistics System Design Workshop to develop a logistics management information system (LMIS) and establish logistics management procedures for the DAH/NVS pilot program that will be documented in a logistics management standard operating procedures (SOP) manual and then rolled out to the DAH central level and to the NVS pilot program provincial, district, and subdistrict levels. The LMIS and the Logistics Management SOPs should be designed and piloted for management of HPAI and rabies prevention and control supplies for the integrated NVS pilot program as a model that can be expanded to other districts and provinces, and eventually include animal disease control supplies used by District and Provincial Livestock Services.

The Logistics System Design Workshop should include sessions on basic stockkeeping procedures, proper storage conditions and practices, and training on the use of stock cards for monitoring all stock transactions and the quantities of each item in storage on a routine basis.

The key components and outputs from the Logistics System Design Workshop will include the following:

- Documentation of the levels and functions of the DAH/NVS supply chain for HPAI and rabies prevention and control supplies
- Training sessions on basic stockkeeping practices, proper storage conditions, and collection and reporting of logistics data
- Design of the LMIS data collection and reporting forms and procedures to be used for the NVS pilot program which may be expanded to include all supplies used by local governments for animal disease control
- Assignment of logistics management roles and responsibilities to DAH and NVS pilot program staff who will be responsible for management of HPAI and rabies prevention and control supplies at each level of the supply chain
 - Identify staff at each level who will be responsible for receiving and storing supplies, collecting and reporting logistics data, and monitoring and maintaining the quality of the HPAI and rabies prevention and control supplies in stock

- A draft logistics monitoring and supportive supervision plan to support implementation of the NVS LMIS and Logistics Management SOPs in NVS pilot program provinces and districts

2) Document the LMIS data collection and reporting forms and procedures, logistics management procedures, and logistics management roles and responsibilities of staff at each level in the supply chain in an SOP manual for the DAH/NVS pilot program

The results of the Logistics System Design workshop will be used to finalize the design of the LMIS data collection and reporting forms and to develop the Logistics Management SOPs and the monitoring and supportive supervision plan to support implementation at all levels of the NVS pilot program supply chain. The NVS program LMIS and Logistics Management SOPs will serve as a model for expansion to other districts and provinces to eventually include animal disease control supplies used by District and Provincial Livestock Services.

The NVS LMIS and Logistics Management SOP manual will need to be reviewed and approved by the MOA/DAH before the rollout training can be scheduled. This will include approval of modifications to existing DAH/NVS staff position descriptions to include specific logistics management roles and responsibilities at each level of the DAH/NVS supply chain.

3) Assign logistics management roles and responsibilities for staff at each level of the DAH/NVS pilot program

This will require MOA/DAH and local government livestock services institutional commitment, allocation of financial and human resources, and technical support to conduct routine monitoring and supportive supervision of NVS logistics management activities at the central, provincial, district, and sub-district levels to ensure the following:

- Proper storage and monitoring of items in stock in all NVS pilot program storage areas
- Routine collection and reporting of logistics data on stock levels and consumption of HPAI and rabies supplies at each level of the NVS pilot program supply chain
- Aggregation and analysis of LMIS data and reports, and management of the LMIS database as required at the different levels of the supply chain
- Use of logistics data to support MOA/DAH and local government livestock services forecasting, budgeting and procurement decisions for animal disease control supplies.

4) Conduct training and support rollout of the DAH/NVS LMIS and Logistics Management SOPs

The LMIS should be implemented to establish routine recording and reporting of stock transactions, consumption, and stock levels of HPAI and rabies supplies stored at the DAH central level and at the Provincial and District Livestock Services and (AHCs) in the three pilot provinces.

Implementation of standard logistics management procedures at all levels of the DAH/NVS supply chain is essential to ensuring the availability, quality, and accountability for the animal health supplies needed to carry out HPAI and rabies prevention and control activities. After piloting and solidifying implementation of the LMIS and the logistics management SOPs in the NVS pilot program areas, the NVS logistics system may be expanded to include other animal disease control supplies and other Provincial and District Livestock Services.

- Conduct the rollout training in the LMIS and Logistics Management SOPs for selected staff from the DAH central level and the provincial, district, and subdistrict levels of the three NVS pilot provinces
- Central and provincial level staff should participate in and provide support for the rollout of the LMIS and the Logistics Management SOPs to the districts and subdistrict levels

A critical issue to address before the LMIS and Logistics Management SOPs can be implemented in the NVS pilot program provinces and districts is the need to conduct a storeroom cleaning and dejunking exercise at the DAH central level and all NVS pilot program storage areas to be able to reorganize, inspect, and count the animal disease control supplies in stock, and then institute the correct use of stock cards for recording logistics data on the quantities and expiration dates of each item that will be reported through the LMIS.

5) Conduct a storeroom designation, cleaning, and dejunking exercise at all levels of the DAH/NVS supply chain and institute the routine use of stock cards for all HPAI and rabies prevention and control supplies

As mentioned in the findings, the general disorder of boxes and supplies observed in the storage areas visited during the assessment hinders access to the storeroom and the ability of staff to locate, count, and inspect the quality of the products in the storeroom. For staff to be able to fill out the stock cards to record what products they have in stock and in what quantities, the NVS pilot program will need to undertake a dejunking exercise to include cleaning, counting, and reorganizing products on pallets, shelving, or in locked cabinets. This may require the designation of new storage areas and the procurement of shelving or cabinets. The NVS pilot program will need to obtain approval for removal and proper disposal of damaged or expired products according to MOA/government guidelines. It will be important to coordinate this exercise as part of the rollout of the LMIS and the Logistics Management SOPs in each province and district.

It will also be necessary to conduct a cleaning and dejunking exercise of the different storage areas at the DAH central level where the buffer stocks are stored and to institute the routine use of stock cards for the animal disease control supplies stored at the central level.

- Allocate new storage areas if needed, and procure appropriate shelving or cabinets as necessary
- Obtain, if necessary, supplies for cleaning the storage areas, storage equipment/furniture, and outer packaging of the supplies
- Clean and organize the supplies in the NVS storage areas
- Conduct a physical count and inspection of HPAI and rabies supplies (including quantities and expiration dates) from all funding sources in the storage area
- Obtain approval for removal and disposal of damaged, expired, or otherwise unusable items
- Arrange for proper disposal of all unusable items
- Obtain appropriate storage equipment (pallets, shelving, locked cupboards) for the NVS pilot program storage areas if needed

The MOA/DAH should also arrange to provide standardized stock cards to be used to record stock balances and movement of animal disease control supplies at the DAH central level and at the Provincial and District Livestock Services offices and AHCs in the NVS pilot program areas.

6) Provide routine monitoring and supportive supervision to support implementation of the LMIS and Logistics Management SOPs at DAH central level and NVS pilot program provinces and districts

Develop a monitoring and supportive supervision plan to support implementation of the LMIS and the Logistics Management SOPs at the DAH central level and at NVS Provincial and District Livestock Services offices and subdistrict AHCs. The SOPs will include supervision checklists and Job Aids for specific logistics management tasks related to maintaining proper storage conditions, basic stockkeeping practices, and LMIS data collection and reporting that will be developed from the results of the Logistics System Design Workshop. This may include IT technical support from FAO to staff responsible for managing LMIS data input and report generation tasks at the different levels of the DAH/NVS supply chain. The monitoring and supportive supervision plan should also include a feedback reporting system for sharing the results of the supportive supervision visits with the provincial, district, and AHC levels.

7) Strengthen cold chain management and monitoring of all vaccines used for DAH program activities

Vaccines should be managed separately from other supplies to maintain the cold chain in storage and transport and to closely monitor and report on vaccine usage, stock levels, expiration dates, and batch numbers.

Although vaccines were not a primary focus of the NVS supply chain assessment, it was evident that cold chain storage conditions and monitoring of vaccine supplies at the NVS provinces and districts visited was inadequate. Vaccines have specific supply chain requirements different from other types of animal health supplies. Proper vaccine storage and monitoring should be conducted for all vaccines in stock at the Provincial and District Livestock Services Offices and sub-district AHCs. Therefore, these recommendations apply to all the vaccines that are managed, stored, and used to support DAH program activities.

Training events should be followed by close monitoring and on-site supportive supervision of staff responsible for storage and management of vaccines in the NVS pilot program areas.

The DAH, with central level APBN funds, has undertaken extensive training over the past 2 years in cold chain management and logistics management of vaccines covering 33 of the 34 provinces of the country as of this assessment. It is understood that some provinces, in turn, are providing local government funding to replicate the training in the districts. It is recommended that these training efforts be followed by close monitoring and onsite supportive supervision of staff responsible for storage and management of vaccines in the NVS pilot program areas to ensure the quality of the vaccines in storage and to strengthen collection and reporting of logistics data on vaccine supplies at each level of the supply chain.

8) Conduct advocacy and socialization on the importance of collecting and using logistics data and following recommended logistics management practices in the NVS pilot program areas

Incorporate advocacy for logistics management into ongoing national and provincial level animal health meetings, training events, and workshops, as well as during routine logistics monitoring and supportive supervision visits to the NVS pilot program sites. Emphasize the importance of protecting and maintaining the quality of the products in storage in the NVS pilot program areas, and maintaining stock records of the quantities and condition of each item in stock.

Medium-term recommendations (1–2 years)

1) Determine how the LMIS and the logistics management SOPs developed for the DAH/NVS program may be expanded to address the overall local government animal disease control supply chain and prepare rollout plan accordingly.

The ultimate value of the LMIS and the logistics management SOPs developed for the NVS pilot program will be based on how well it is applied to the overall local government animal disease control supply chain in all districts and provinces of Indonesia. Lessons learned in the process of developing and implementing the LMIS and the logistics management SOPs in the NVS pilot areas will be used to determine how a national animal disease control logistics system could be feasibly developed, with a subsequent national animal disease control LMIS and logistics management SOP rollout plan subject to support and initiative from the DAH and District and Provincial Livestock Services.

2) Develop an LMIS software to support LMIS processes

Following on from the specification of data collection and reporting forms, and the agreed data flows between various levels, as specified in the Logistics Management SOP manual, the software that will be used to support LMIS operations will need to be developed and pilot tested. This will entail a decision regarding the preferred software platform, structuring back-end tables and relations, defining and coding LMIS business logic, and designing and coding data input screens and report formats. Linkages with or integration into the existing animal disease control database and iSIKNHAS will need to be identified, designed and implemented.

3) Strengthen the forecasting methodology for estimating animal health supply needs to include the use of logistics data from all levels of the animal disease control supply chain

Once reliable logistics data on the actual quantities of HPAI and rabies supplies in stock and consumption of the supplies become available through the LMIS, managers and other decision-makers should incorporate the use of logistics data into the government's annual planning and budgeting process to more accurately forecast the supply needs for animal disease control activities within the NVS program, and to adjust the budget allocations to reflect the estimated cost for procurement of the quantities of supplies that are realistically expected to be used by the program.

The DAH should continue to utilize available population data, program target data, and historical data on animal health services to estimate the annual animal health supply needs but should strive to improve the quality, timeliness, and reliability of the data. As logistics data on the actual quantities of animal health supplies in stock and consumption of these supplies becomes available through the LMIS, the DAH/NVS program should use these data to inform and refine the final estimate of the quantities of supplies to be procured. (Historical services data are the numbers of animals vaccinated

over a specific period of time versus logistics data, which are the actual quantities of each item that was used for vaccination in the same time period).

Once the annual forecasts and budgets for procurement of the supplies have been prepared, it is recommended that semi-annual updates of the forecasts be conducted to compare the actual quantities of supplies consumed and the quantities of supplies in stock at each NVS site at each level of the supply chain against the quantities that were forecasted during the previous year's planning and budgeting exercise. In this way, the NVS program will be able to better monitor and maximize the use of available resources for procurement of supplies and account for the quantities of supplies being used for the NVS program.

4) *Incorporate the use of logistics data in the MOA annual planning, budgeting, and procurement process to account for the extended lead time from planning to budget allocation and procurement, until final delivery of products to the DAH/NVS pilot sites*

The final quantities of each item to be procured should also be adjusted at the time of the annual planning and budgeting exercise to reflect what the expected stock levels will be at the different levels of the DAH/NVS supply chain 12 to 18 months later, when the supplies are expected to be delivered. (See section *IV. MOA budgeting and procurement process and timeline for HPAI and rabies supplies*). Adjusting the quantities to be procured to account for the government's extended lead time for planning, budgeting, and procurement, until final delivery of supplies at the NVS program sites, will be one of the most challenging supply chain decisions program managers will need to make.

Next Steps

This section of the assessment report summarizes the key issues and decisions that will need to be addressed with the Ministry of Agriculture (MOA)/Directorate of Animal Health (DAH) and Food and Agriculture Organization of the United Nations (FAO) to determine the timing and next steps for further USAID | DELIVER PROJECT technical assistance to implement the proposed recommendations.

Development of a Computerized Logistics Management Information System (LMIS) for the National Veterinary Services (NVS) Pilot Program

It will be important to assess the current information technology (IT) infrastructure, Internet connectivity, and human resource capacity for electronic data entry and reporting at the provincial and district levels, and database management at the central level of the DAH/NVS pilot program to determine the best option for implementation of a computerized LMIS for managing animal disease control supplies used by local governments. The various options to be considered include the following:

- Adaptation of the existing NVS database (previously the participatory disease surveillance and response [PDSR] database for avian influenza), which has been expanded to report on both HPAI and rabies activities, to include a logistics module
- Creation of a stand-alone Microsoft Access database
- Use of Excel spreadsheets to enter LMIS data and send reports by e-mail to be aggregated at the central level

Other considerations for the design and implementation of a computerized LMIS for the NVS pilot program include the potential use of cell phone technology for reporting logistics data via short message service (SMS) and the need to design the computerized LMIS such that data may easily be exported to the integrated, central animal health database—integrated national animal health management information system (iSIKHNAS)—being developed by the Australian DAFF EID program to link the multiple animal health reporting systems that currently collect and report laboratory data and field surveillance data.

Other key issues to be addressed with the MOA/DAH and FAO include the following:

- Where the expanded NVS pilot program database currently still being managed by FAO will be housed at the DAH central level
- Where and how the computerized LMIS data collection and reporting system for management of animal disease control supplies for the NVS pilot program will also be managed at each of the government levels

- How the computerized LMIS should be designed to be able to collect and report logistics data on all animal disease control supplies
- How the computerized LMIS should be designed so that it can be expanded to other districts and provinces, including the use of freely-licensed software and locally sustainable technologies
- Identify which staff at the central and provincial levels will be responsible for receiving, aggregating, analyzing, and reporting LMIS data on the status of animal disease control supplies to the various levels of government,
- Identify which staff at the central and provincial levels will be responsible for using logistics data to inform the forecasting, budgeting, procurement, distribution, and management of animal disease control supplies throughout the DAH/NVS supply chain

Planning for the NVS Logistics System Design Workshop

The USAID | DELIVER PROJECT has a specific approach, type of curriculum, and interactive process for conducting a logistics system design workshop. It will be important to discuss the technical scope of work to include the workshop goals and objectives, methodology, selection of participants, development of training curriculum and materials, and workshop schedule with FAO and the MOA/DAH to agree on the time frame for conducting the Logistics System Design workshop, as well as incorporate FAO best practices and feedback on workshop structure and methods, particularly in relation to training.

MOA/DAH Approval of the NVS Pilot Program LMIS and Logistics Management Standard Operating Procedures

Once the Logistics System Design workshop has been conducted, and the LMIS data collection and reporting forms and procedures; logistics management roles and responsibilities of Government of Indonesia staff; and other logistics management procedures have been documented in the Logistics Management SOP manual, approval from the MOA/DAH will be required before the rollout training can take place.

- MOA/DAH review and approval of the NVS LMIS and Logistics Management SOP manual will be required before the rollout training can be conducted
- MOA/DAH and local government livestock services approval to modify Government of Indonesia staff position descriptions to include logistics management roles and responsibilities at each level of the NVS pilot program will be required before the rollout training can begin
- MOA/DAH and local government livestock services to officially designate storage space for animal disease control supplies and to procure required shelving and cabinets as required

Rollout Training for Implementation of the LMIS and Logistics Management SOPs at the DAH Central Level and NVS Pilot Provinces and Districts

- The initial rollout of the NVS LMIS and Logistics Management SOPs should be coordinated with the storeroom designation, cleaning and dejunking exercise at all levels of the NVS pilot program supply chain

- MOA/DAH central level and local government approval will be needed to designate and equip an appropriate storeroom, to conduct the storeroom cleaning and dejunking exercise, and to introduce the use of stock cards at all levels of the DAH supply chain in the NVS pilot program areas
- MOA/DAH and local government authorization, guidance, and assignment of human and financial resources for removal and proper disposal of damaged and expired vaccines, medicines, and other supplies identified as unusable will also be needed
- MOA/DAH and local government institutional commitment, financial and human resources, and technical support will be needed to support the initial rollout and the post-rollout monitoring and supportive supervision for successful implementation of the NVS pilot program LMIS and Logistics Management SOPs at the central, provincial, district, and subdistrict levels.

Resources for Conducting the Proposed Technical Assistance

Under the U.S. Agency for International Development (USAID) emerging pandemic threats (EPT) Program collaboration between the IDENTIFY Project and the USAID | DELIVER PROJECT, resources to support the proposed technical assistance will be provided by the USAID | DELIVER PROJECT and FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) in Indonesia.

The USAID | DELIVER PROJECT will provide the following:

- Ongoing management, administrative and technical support for planning, conducting, and ensuring the quality of the technical assistance for development and subsequent rollout of the LMIS and the Logistics Management SOPs
- Technical advisors with the appropriate skill sets and experience required to conduct the agreed upon activities, including the Logistics System Design Workshop, development of the LMIS and Logistics Management SOPs, and subsequent rollout training of the LMIS in NVS program locations. All costs of the advisors' time and travel will be covered by the project
- All costs for printing, publication, and dissemination of technical materials and reports resulting from the technical assistance
- Pending funding support from USAID, the USAID | DELIVER PROJECT may be able to support all venue and accommodation costs for the Logistics System Design Workshop and the subsequent rollout trainings for implementation of the NVS LMIS and Logistics Management SOPs.

Pending funding support from USAID, FAO will provide:

- Technical support and input for agreed upon activities, including development of LMIS, integration within NVS pilot program, and facilitation of local government and MOA/DAH input and approval in collaboration with USAID | DELIVER PROJECT.

Logistics System Design workshop for the NVS pilot program

- Administrative support for obtaining the venue and coordinating arrangements for the Logistics System Design workshop

- Travel costs for DAH central level staff and provincial, district, and subdistrict level staff who meet selection criteria to participate in the Logistics System Design workshop

Rollout training for implementation of the LMIS and Logistics Management SOPs in the NVS pilot provinces and districts

- Administrative support for obtaining the venue and coordinating arrangements for the Rollout Training for implementation of the NVS LMIS and Logistics Management SOPs
- Travel costs for DAH central level staff and provincial, district, and subdistrict level staff who meet selection criteria to participate in the Rollout Training for implementation of the NVS LMIS and Logistics Management SOPs

Post-rollout monitoring and supportive supervision to support implementation of the LMIS and Logistics Management SOPs in the NVS pilot provinces and districts

- Travel costs for selected DAH and NVS staff to conduct post-rollout monitoring and supportive supervision visits to NVS provinces and districts to support implementation of the NVS LMIS and Logistics Management SOPs
- Technical support for Government of Indonesia staff responsible for data input and report generation for the NVS LMIS

Design, implementation, and management of the NVS LMIS database at the MOA/DAH central level

- Local costs and technical support for the design, implementation, and management of the NVS LMIS database at the MOA/DAH central level.

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Appendix A

Activity Schedule

Supply Chain Assessment for the National Veterinary Services (NVS) Pilot Program
Directorate of Animal Health (DAH), Ministry of Agriculture, INDONESIA

ACTIVITY SCHEDULE

March 4 - 27, 2013

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
3 In transit via Dubai	4 DELIVER advisors arrive Jakarta 9:35 PM	5 10:00 - 4:00 Assessment Team meeting (DAH, FAO, DELIVER team) to collect program documents; discuss Activity Schedule; Travel for Field Visits	6 9:00 - 4:00 Meetings with stakeholders (FAO, MOA/DAH, URC)	7 9:00 - 4:00 Meetings with stakeholders (FAO, MOA/DAH, URC)	8 9:00 - 4:00 DELIVER consultants meet at DELIVER office to review information/findings to date Finalize travel/perdiem/lodging for Field Visits	9 Prepare draft assessment tools
10 Prepare and translate draft assessment tools	11 9:00 - 4:00 Team meeting at FAO. Review and finalize assessment tools	12 HOLIDAY Hindu Bali Silence Day 1:25 pm Team 1 departs for Padang, West Sumatera	13 8:55 am Team 2 departs for Denpasar, Bali Team 1: Visit to Provincial Livestock Services in Padang. Drive to Bukittingi	14 Team 1: Visit to District Livestock Services and Puskesmas in Agam, West Sumatera Team 2: Visit to Provincial Livestock Services in Denpasar	15 Team 1: Drive back to Padang. 14:00 Return to Jakarta Team 2: Visit District Livestock Services and Puskesmas in Klungkung, Bali 6:00pm Return to Jakarta	16
17 Prepare technical Overview on Supply Chain Framework and Logistics	18 9:00 - 4:00 Assessment team meeting at FAO for review and analysis of findings, identify information gaps remaining, discuss recommendations and presentation for Stakeholder Debriefing.	19 One team continue meetings at DAH (Budgeting and DAH Stores Manager) One team visit FAO central warehouses in Jakarta (FAO Logistics Officer)	20 9:00 - 5:00 DELIVER consultants meet at DELIVER office to review findings, recommendations, and draft presentation slides for Stakeholder Debriefing.	21 9:00 - 1:00 Assessment team meeting at FAO to review presentation for Stakeholder Debriefing Finalize presentation and preparations for Stakeholder Debriefing	22 8:30 - 11:30 at DAH Stakeholder Debriefing: Supply Chain Framework/ Assessment Results Final meeting at FAO	23
24	25 DELIVER advisors/ consultants work on Assessment Report	26 DELIVER advisors /consultants work on Assessment Report USAID Debriefing	27 DELIVER Advisors depart Jakarta 2:00 PM	28	29	30

Appendix B

List of Facilities Visited

List of Facilities Visited March 12 – 15, 2013
Agam District, West Sumatera

Assessment Team	Date of Visit	Province	Staff Interviewed
Claudia Allers, USAID DELIVER Juhartini, USAID DELIVER Drh. Pebi Purwo Suseno, DAH Akbar Kusumanegara, FAO Wisnu Arbani M, Interpreter, FAO	March 13, 2013	West Sumatera Provincial Livestock Services Office	1. Drh. Erinaldi, MM, Head of the Provincial Livestock Services Office 2. Drh. Syaharuddin Gafar, MM, Head of Prevention and Disease Control Section 3. Drh. Enni Haswita, LDCC and Head of UPTD BLKKH (Regional Technical Services Unit) 4. Desy, APBN Goods Treasurer 5. Novrizal, APBD I Goods Treasurer
Assessment Team	Date of Visit	District	Staff Interviewed
Claudia Allers, USAID DELIVER Juhartini, USAID DELIVER Drh. Pebi Purwo Suseno, DAH Akbar Kusumanegara, FAO Wisnu Arbani M, Interpreter, FAO	March 14, 2013	Agam District Agriculture, Food Plants, Horticulture, and Livestock Services Office	1. Drh. Elly Rukmini, Head of Animal Health Section 2. Drh. Wella Roza, Head of Environmental Management Efforts Section and Head of UPT (Technical Services Unit) Wilayah I
Assessment Team	Date of Visit	AHC/PKW	Staff Interviewed
Claudia Allers, USAID DELIVER Juhartini, USAID DELIVER Drh. Pebi Purwo Suseno, DAH Akbar Kusumanegara, FAO Wisnu Arbani M, Interpreter, FAO	March 14, 2013	UPT (Technical Implementation Unit) Wilayah I	1. Drh. Wella Roza, Head of UPT (Technical Implementation Unit) Wilayah I 2. Dodi Roswandi, Paravet

List of Facilities Visited March 13 – 15, 2013

Klungkung District, Bali

Assessment Team	Date of Visit	Province	Staff Interviewed
Ariella Bock, USAID DELIVER Dr. Anton Widjaya, USAID DELIVER Drh. Retno Widiastuti, URC/DAH Margaretha Kristanti, Technical Assistant, FAO Karen Tjia, Interpreter, FAO	March 14, 2013	Bali Provincial Livestock Services Office	<ol style="list-style-type: none"> 1. Drh. Nata kesuma M.MA, Head of Animal Disease Division 2. Drh. Made Sujerni, Head of Animal Health Laboratory 3. Drh. Made Candra, Head of Animal Disease Prevention and Control Section 4. Drh. Sagung Ani Indah, Staff of Finance and Program Planning sub-division 5. Sumargiono, Staff for Livestock Services Office Logistics Management 6. Bun Putra, staff for Livestock Services Office Logistics Management 7. I Nyoman Gede Suyasa, /staff for Livestock Services Office Logistics Management 8. Staff at Animal Disease storage room
Assessment Team	Date of Visit	District	Staff Interviewed
Ariella Bock, USAID DELIVER Dr. Anton Widjaya, USAID DELIVER Drh. Retno Widiastuti, URC/DAH Margaretha Kristanti, Technical Assistant, FAO Karen Tjia, Interpreter, FAO	March 15, 2013	Klungkung District Livestock Services Office	<ol style="list-style-type: none"> 1. Drh. I.G.N. Budiwangsa, Head of Klungkung District Livestock, Fishery and Marine Services Office. 2. Drh. Ni Ketut Suartini, Head of Animal Health Division. 3. Drh. N.Mulyawan, Head of Disease Surveillance Section. 4. Drh. A.A. Ngurah Raka, Staff of Animal Disease Division.

			<ol style="list-style-type: none"> 5. Drh. I.G.N. Budiwangsa, Head of Klungkung District Livestock, Fishery and Marine Services Office. 6. Drh. Ni Ketut Suartini, Head of Animal Health Division. 7. Drh. N.Mulyawan, Head of Disease Surveillance Section. 8. Drh. A.A. Ngurah Raka, Staff of Animal Disease Division. 9. Drh. I.P.G. Sediana, Head of Veterinary Public Health Section. 10. Drh. Nyoman Adiyani, Staff of Animal Health Division and Logistics Manager for Animal Health Supplies.
Assessment Team	Date of Visit	AHC/PKW	Staff Interviewed
Ariella Bock, USAID DELIVER Dr. Anton Widjaya, USAID DELIVER Drh. Retno Widiastuti, URC/DAH Margaretha Kristanti, Technical Assistant, FAO Karen Tjia, Interpreter, FAO	March 15, 2013	Minggir AHC	<ol style="list-style-type: none"> 1. Drh. I Wayan Sutresna, NVS Officer and Head of Minggir AHC. 2. Paravet at Minggir AHC

Appendix C

List of Stakeholders

List of Key Stakeholders Interviewed and Debriefing Participants

No.	Name	Title	Institution
1.	Dr. Pudjiatmoko, PhD	Director	DAH/DGLAHS/MOA
2.	Dr. Pebi Purwo Suseno	Veterinary Officer (National Master Trainer for Cold Chain Management)	Sub-directorate of Animal Disease Prevention and Control/DAH
3.	Dr. Elly Sawitri	Senior Technical Advisor	FAO, ECTAD
4.	Dr. Mohammed Azhar	National Coordinator, Rapid Response Unit (URC in Indonesian)	Sub-directorate of Animal Disease Prevention and Control/DAH
5.	Dr. Tjahjani Widiastuti, DVM	Head, Emergency Diseases Preparedness Section	Sub-directorate of Animal Biosecurity/DAH
6.	Dr. Dadang	Official Commitment Maker	DAH
7.	Dr. Yunita Widayanti	Procurement Officer	DAH
8.	Dr. Syafrison Idris	Head Section of Disease Investigation	Sub-directorate of Animal Disease Surveillance/DAH
9.	Dian Fendi	Planning Staff	Sub-directorate of Animal Disease Surveillance/DAH
10.	Dr. Dhony K.N.	Veterinary Officer	Sub-directorate of Animal Disease Surveillance/DAH
11.	Dr. Krisnandana	Head of Sub-directorate of Animal Health Organization and Resources	Sub-directorate of Animal Health Organization and Resources/DAH
12.	Dr. Anna Sulistri	Head Section of Animal Health Organization	Sub-directorate of Animal Health Organization and Resources/DAH
13.	Dr. Mardiatmi Soewito	Head of Sub-directorate of Animal Disease Prevention and Control	Sub-directorate of Animal Disease Prevention and Control/DAH
14.	Dr. Yuni Yupiana	Head Section of Disease Eradication	Sub-directorate of Animal Disease Prevention and Control/DAH
15.	Dr. Erna Rahmawati	Veterinary Officer	Sub-directorate of Animal Disease Prevention and Control/DAH
16.	Dr. Ermawanto	Veterinary Officer	Sub-directorate of Animal Disease Prevention and Control/DAH
17.	Dr. Ernawati	Veterinary Officer	Sub-directorate of Animal Disease Prevention and Control/DAH
18.	Dr. Ratna Vitta E.	Veterinary Officer (National Master Trainer for Cold chain Management)	Sub-directorate of Animal Disease Prevention and Control/DAH
19.	Dr. Retno Widiastuti	Veterinary Officer (National Master Trainer for Cold chain Management)	URC-PHMS/DAH
20.	Dr. Umi Purwanti	Veterinary Officer (National Master Trainer for Cold chain Management)	URC-PHMS/DAH
21.	Dr. Noeri Widowati	Veterinary Officer	URC-PHMS/DAH
22.	Dr. Enen Rina	Veterinary Officer	Sub-directorate of Animal Biosecurity/DAH
23.	Esti Saudah	Staff /Stock Manager	Sub-directorate of Animal Disease Surveillance/DAH

List of Key Stakeholders Interviewed and Debriefing Participants

No.	Name	Title	Institution
24.	Drh. Yunasri	Veterinary Officer	Sub-directorate of Animal Disease Prevention and Control/DAH
25.	Dr. James McGrane, MVB, MVM, MSc, MRCVS	Team Leader	FAO ECTAD Indonesia
26.	Dr. Eric Brum, DVM	Chief Technical Advisor	FAO, ECTAD Indonesia
27.	Akbar Kusumanegara	Disease Control Center (DCC) Data Encoder	FAO ECTAD Indonesia
28.	Margaretha Kristanti	National Liaison Officer/Local Government	FAO ECTAD Indonesia
29.	Denni Rajagukguk	Programme Assistant	FAO ECTAD Indonesia
30.	Julianto Sihombing	Logistics Assistant	FAO ECTAD Indonesia
31.	Pak Agus	Storeroom Manager	FAO/Fatmawati Postal Service
32.	Claudia Allers	TO6 Technical Team Leader	USAID DELIVER PROJECT
33.	Ariella Bock	M&E Technical Advisor	USAID DELIVER PROJECT
34.	Russell Vogel	Country Director	USAID DELIVER PROJECT
35.	Dr. Anton Widjaya	Consultant	USAID DELIVER PROJECT
36.	Ms. Juhartini	Consultant	USAID DELIVER PROJECT
37.	Kendra Chittenden, PhD	Senior Infectious Diseases Advisor	USAID INDONESIA
38.	Jonathan Happold BVSc MSc MANZCVSc	Principal Veterinary Advisor & Team Leader	Australia Indonesia Partnership for Emerging Infectious Diseases (AIP-EID), Department of Agriculture, Fisheries & Forestry
39.	Emma Hobbs	Makassar, Sulawesi	AIP-EID

Appendix D

Provincial and District Livestock Services Questionnaire

**National Veterinary Services (NVS)
Pilot Program**

Supply Chain Assessment

**Provincial and District Livestock
Office
Questionnaire**

Directorate of Animal Health/Ministry of Agriculture (DAH/MOA)

**Food and Agriculture Organization of the United Nations (FAO)
Emergency Centre for Transboundary Animal Diseases (ECTAD)
ECTAD Programme in Indonesia**

INTRODUCTION OF THE ASSESSMENT TEAM

Ask for the person in charge at the Provincial/District Livestock Office and show the letter of introduction/ authorization from the MOA/DAH. Introduce all team members and ask the Provincial/District Livestock Office/Animal Health Center staff to introduce themselves.

Explain the objectives of the NVS Supply Chain Assessment and the purpose of the visit to the Provincial/District Livestock Office/Animal Health Center:

“Good day and thank you for receiving us today. My name is _____. My colleague(s) and I are representing the Ministry of Agriculture/Directorate of Animal Health and the Food and Agriculture Organization (FAO). With technical assistance of the USAID | DELIVER PROJECT, we are conducting an assessment of the logistics system for managing HPAI and Rabies prevention and control supplies for the Animal Health program. We are visiting Provincial and District Livestock Offices and selected Animal Health Centers in the NVS Pilot Program provinces.

The purpose of the visit today is to learn about the roles and responsibilities of the Provincial/ District Livestock Offices in financing, procurement, inventory management, storage, distribution and monitoring/reporting on HPAI and Rabies prevention and control supplies at the provincial, district and animal health center levels. We have prepared a structured questionnaire to guide our discussion today to help us understand how the logistics system for managing HPAI and Rabies prevention and control supplies functions. After the discussion, we would like permission to visit the Provincial/District Livestock Office **and** Animal Health Center storeroom to speak with the person(s) responsible for managing the stocks, and to observe stockkeeping practices and storage conditions for these supplies.

The results of the assessment will provide information for developing recommendations to strengthen the Animal Health logistics system to be able to ensure the continuous availability and quality of HPAI and Rabies Prevention and Control Supplies at the Provincial/District Livestock Offices and Animal Health Centers for NVS officers to be able to conduct HPAI and Rabies surveillance, prevention, IEC, and rapid response activities.

We would like to emphasize that this is not a supervisory visit and the performance of individual staff members is not being evaluated.”

Ask the person in charge of the Provincial/District Livestock Office/Animal Health Center and any other staff members present if they have any questions before proceeding with the assessment questions.

GENERAL INFORMATION

1. Name and Institution of Interviewer(s): <input type="checkbox"/> MOA/DAH <input type="checkbox"/> FAO <input type="checkbox"/> USAID DELIVER PROJECT <input type="checkbox"/> USAID DELIVER PROJECT <input type="checkbox"/> Other <input type="checkbox"/> Other	Name <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	Title <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
2. Date of Visit:	_____ Day / Month / Year	
3. Name of Facility:		
4. Province:		
5. District:		
6. Level of Facility:	<input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Subdistrict/AHC <input type="checkbox"/> Community /Village Level	

I. GUIDELINES FOR HPAI AND RABIES CONTROL SERVICES

<p>1. Are written guidelines for HPAI Prevention and Control services available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication)</i></p> <p>_____</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>2. Are written guidelines for Rabies Prevention and Control services available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication)</i></p> <p>_____</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>3. Are there documented SOPs for implementation of HPAI prevention and control activities available in this facility? <i>(If yes, ask to see SOPs and note title and date of publication)</i></p> <p>_____</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>4. Are there documented SOPs for implementation of Rabies prevention and control activities available in this facility? <i>(If yes, ask to see SOPs and note title and date of publication)</i></p> <p>_____</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>5. Are there other documents (training materials, IEC material, etc.) for implementation of HPAI prevention and control activities available in this facility? <i>(If yes, ask to see material and note title and date of publication)</i></p> <p>_____</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>6. Are there other documents (training materials, IEC material, etc.) for implementation of Rabies prevention and control activities available in this facility? <i>(If yes, ask to see material and note title and date of publication)</i></p> <p>_____</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>7. Additional comments:</p> <p>_____</p>	

II. GUIDELINES AND STANDARD OPERATING PROCEDURES FOR LOGISTICS MANAGEMENT OF ANIMAL HEALTH SUPPLIES

<p>8. Are there written guidelines or standard operating procedures (SOPs) for logistics management of Animal Health supplies (vaccines, drugs, consumables, PPE) available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication and go to question 8.a. If no, SKIP TO SECTION III)</i></p> <hr/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
<p>a. Do these include procedures for storage of Animal Health supplies (vaccines, drugs, consumables, PPE)?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know /not sure
<p>b. Do these include procedures for monitoring stock levels of supplies?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
<p>c. Do these include procedures for ordering and receiving supplies?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
<p>d. Do these include procedures for reporting on stock levels and consumption of supplies?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
<p>e. Do these include guidelines for disposal or destruction of damaged and expired supplies? <i>(If yes, ask to see guidelines and note title and date of publication)</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure

III. GUIDELINES AND STANDARD OPERATING PROCEDURES FOR INFECTION PREVENTION AND CONTROL (IPC) AND INFECTIOUS WASTE MANAGEMENT

<p>9. Are there written guidelines on Infection, Prevention and Control (IPC) and management of infectious waste available in this facility?</p> <p>a. Infection prevention</p> <p>b. Use of protective gear</p> <p>c. Safe disposal of sharps (i.e., needles, etc.)</p> <p>d. Safe disposal of infectious waste</p> <p>e. Other (specify)</p> <p>_____</p> <p><i>Ask to see guidelines and note title and date of publication of each. If no IPC guidelines skip to #11</i></p> <p>_____</p> <p>_____</p>	<p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p>
<p>10. Do the written guidelines include procedures for sample collection, packaging, and shipping available in this facility?</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Not applicable</p>
<p>11. Have all veterinary officers and AHC workers been trained in IPC and management of infectious waste</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
<p>12. Do all facilities have adequate supplies for IPC (e.g. masks, gloves, disinfectant etc.) for:</p> <p>a. routine activities</p> <p>b. In the event of an outbreak</p>	<p><input type="checkbox"/> Yes/ No</p> <p><input type="checkbox"/> Yes/ No</p>
<p>13. Do all facilities have adequate supplies for infectious waste management (e.g. safety boxes, bio-hazard bag) for:</p> <p>a. routine activities</p> <p>b. In the event of an outbreak</p>	<p><input type="checkbox"/> Yes/ No</p> <p><input type="checkbox"/> Yes/No</p>
<p>14. Additional comments:</p>	

IV. FINANCING FOR HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

<p>15. What are the sources of financing for the Animal Health Program?</p>	<p><input type="checkbox"/> Decon</p> <p><input type="checkbox"/> TP (Infrastructure and equipment funding)</p> <p><input type="checkbox"/> APBD 1</p> <p><input type="checkbox"/> APBD 2</p> <p><input type="checkbox"/> DAK</p>
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	<input type="checkbox"/> FAO <input type="checkbox"/> Other _____
16. Does the Animal Health Program budget include line items for: <ul style="list-style-type: none"> a. Purchasing supplies (vaccines, drugs, consumables, PPE, etc.) b. Infectious waste management supplies c. Warehousing/storage costs d. Transportation for distribution of supplies 	<input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No
17. Is the Animal Health Program funding sufficient for procurement of HPAI and Rabies supplies? <ul style="list-style-type: none"> a. Vaccines b. Drugs c. Consumables d. PPE kits e. Other _____ <p style="text-align: center;">If yes for all, skip to Section V (#19)</p>	<input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No <input type="checkbox"/> Yes/No
18. What percent of your supply needs are covered with all of your funding source for HPAI and Rabies supplies <p>Vaccines: _____</p> <p>Drugs: _____</p> <p>Consumables: _____</p> <p>PPE Kits _____</p> <p>Other: _____</p>	

V. FORECASTING HPAI AND RABIES PREVENTION AND CONTROL SUPPLY NEEDS

19. Describe the forecasting methodology for estimating HPAI and Rabies supply needs	
a. How often does the Animal Health Program prepare forecasts of the HPAI and Rabies supply needs?	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly <input type="checkbox"/> Other
b. Which month(s)?	_____ _____
c. Who participates in the forecasting process?	List all Participants _____ _____ _____ _____ _____
d. What data is used for forecasting HPAI and Rabies supply needs?	<input type="checkbox"/> Demographic/population data <input type="checkbox"/> Historical services data <input type="checkbox"/> Historical consumption data <input type="checkbox"/> Program targets <input type="checkbox"/> Budget allocation <input type="checkbox"/> Other _____
e. What other factors are taken into consideration in estimating future supply needs?	<input type="checkbox"/> Program expansion plans <input type="checkbox"/> Vaccination campaigns <input type="checkbox"/> Seasonal variations <input type="checkbox"/> Past periods of stockouts <input type="checkbox"/> Procurement lead time <input type="checkbox"/> Other
f. Describe the steps for estimating the quantities of HPAI and Rabies supplies needed for 2013	
Additional comments:	

VI. PROCUREMENT OF HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

20. What are the sources of supply for the Animal Health Program?	
a) Vaccines	<input type="checkbox"/> Pusvetma <input type="checkbox"/> Private Manufacturer <input type="checkbox"/> Local Supplier (in-land) <input type="checkbox"/> DAH <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> In-kind donation <input type="checkbox"/> Other_____
b) Drugs	<input type="checkbox"/> Pusvetma <input type="checkbox"/> Private Manufacturer <input type="checkbox"/> Local Supplier (in-land) <input type="checkbox"/> DAH <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> In-kind donation <input type="checkbox"/> Other_____
c) Consumables	<input type="checkbox"/> Pusvetma <input type="checkbox"/> Private Manufacturer <input type="checkbox"/> Local Supplier (in-land) <input type="checkbox"/> DAH <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> In-kind donation <input type="checkbox"/> Other_____
d) Diagnostic (Rapid Antigen Test Kits, VTM etc.)	<input type="checkbox"/> Pusvetma <input type="checkbox"/> Private Manufacturer <input type="checkbox"/> Local Supplier (in-land) <input type="checkbox"/> DAH <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> In-kind donation <input type="checkbox"/> Other_____
e) PPE Kits	<input type="checkbox"/> Pusvetma <input type="checkbox"/> Private Manufacturer <input type="checkbox"/> Local Supplier (in-land) <input type="checkbox"/> DAH <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> In-kind donation <input type="checkbox"/> Other_____

<p>21. Who is responsible for carrying procurement of HPAI and Rabies supplies at this facility?</p> <p>a) Direct procurement (under 200 million)</p> <p>b) Open-bidding procurement (over million)</p>	<p>a) Direct Procurement:</p> <hr/> <hr/> <p>b) Open Biding</p> <hr/> <hr/>
<p>22. Who is responsible for ordering and scheduling delivery of HPAI and Rabies supplies at this facility?</p>	<hr/> <hr/> <hr/>
<p>23. <u>When direct procurement is used</u>, what is the lead time from the start of the procurement process (from review of technical specifications) until HPAI and Rabies supplies are delivered, inspected and entered into inventory for distribution at this facility?</p>	<p><input type="checkbox"/> 1-3 months</p> <p><input type="checkbox"/> 3-6 months</p> <p><input type="checkbox"/> 6- 12 months</p> <p><input type="checkbox"/> 1 year or more</p>
<p>24. <u>When open-bidding procurement is used</u>, what is the lead time from the start of the procurement process (from review of technical specifications) until HPAI and Rabies supplies are delivered, inspected and entered into inventory for distribution at this facility??</p>	<p><input type="checkbox"/> 1-3 months</p> <p><input type="checkbox"/> 3-6 months</p> <p><input type="checkbox"/> 6- 12 months</p> <p><input type="checkbox"/> 1 year or more</p>
<p>25. Describe the general process and timeframes for procurement of HPAI and Rabies supplies? (What is the lead time involved from planning until distribution for HPAI and Rabies supplies)</p>	
<p>26. When determining procurement quantities, <u>do you take into consideration</u>:</p> <p>a. Current stock levels</p> <p>b. Average monthly consumption data</p> <p>c. Quantities of expired or damaged stock/soon to expire stocks</p> <p>d. Buffer stock</p> <p>e. Order lead time from suppliers</p> <p>f. Other_____</p>	<p><input type="checkbox"/> Yes/ No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p> <p><input type="checkbox"/> Yes/No</p>
<p>27. Are stock levels of supplies monitored regularly so procurement decisions can be made to avoid stockouts?</p>	<p><input type="checkbox"/> Yes/</p> <p><input type="checkbox"/> No</p>

VII. LOGISTICS MANAGEMENT OF HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

28. Who in this facility is responsible for management of the HPAI and Rabies supplies?	Name(s) and Title(s) _____ _____
29. How do you know when it is time to place an order for additional HPAI and Rabies supplies at this facility?	_____ _____ _____
30. Does the facility have an established minimum or maximum stock level below/above which the inventory level should not go? <i>(If yes, write the stock level)</i>	<input type="checkbox"/> Yes, <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
Ordering and Receiving HPAI and Rabies Supplies	
31. Who determines what quantities of supplies to order for this facility?	Name(s) and Title(s) _____ _____ _____
32. What type(s) of data do you use to calculate how much to order? <i>(Check all that apply.)</i>	<input type="checkbox"/> Average monthly consumption (supplies data) <input type="checkbox"/> Quantities of stock in the facility <input type="checkbox"/> Maximum stock level <input type="checkbox"/> Number of animals treated/vaccinated (service data) <input type="checkbox"/> Other <i>(specify)</i> _____ <input type="checkbox"/> Don't know/not sure
33. What type of form(s) does the facility use for ordering and receiving HPAI and Rabies supplies? <i>(Check all that apply and verify. Request blank copy of form if possible)</i>	<input type="checkbox"/> Order book <input type="checkbox"/> Delivery note <input type="checkbox"/> Requisition/Issue voucher <input type="checkbox"/> Other <i>(specify)</i> _____
34. Does the facility use a manual, paper-based or a computerized system for ordering and receiving HPAI and Rabies supplies? <i>(If computerized, describe the computer software program used; how order quantities are calculated; how orders are requested and received)</i>	<input type="checkbox"/> Manual <input type="checkbox"/> Computerized

<p>35. Where do you send the order for resupply of HPAI supplies? <i>(Check all that apply.)</i></p>	<input type="checkbox"/> Private Manufacture <input type="checkbox"/> DAH central level <input type="checkbox"/> FAO central level? <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Local supplier <input type="checkbox"/> Donor <input type="checkbox"/> Other (<i>specify</i>) _____	
<p>36. Where do you send the order for resupply of Rabies supplies? <i>(Check all that apply.)</i></p>	<input type="checkbox"/> Manufacture <input type="checkbox"/> DAH central level <input type="checkbox"/> FAO central level <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Local supplier <input type="checkbox"/> Donor <input type="checkbox"/> Other (<i>specify</i>) _____	
<p>37. How often do you place orders for Vaccines?</p>	<p><u>HPAI</u></p> <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Annual <input type="checkbox"/> Other (<i>specify</i>) _____	<p><u>Rabies</u></p> <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Annual <input type="checkbox"/> Other (<i>specify</i>) _____
<p>38. How often do you place orders for:</p> <p>a. Diagnostics for HPA (Antigen test kits, VTM)</p> <p>b. Drugs (e.g. Euthanasia drugs for dog)/?</p>	<p><u>HPAI</u></p> <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Annual <input type="checkbox"/> Other (<i>specify</i>) _____	<p><u>Rabies</u></p> <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Annual <input type="checkbox"/> Other (<i>specify</i>) _____
<p>39. How often do you place orders for CONSUMABLES (e.g. Disinfectants, Needles/Syringes, and IPC supplies)?</p>	<p><u>HPAI</u></p> <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Annual <input type="checkbox"/> Other (<i>specify</i>) _____	<p><u>Rabies</u></p> <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Annual <input type="checkbox"/> Other (<i>specify</i>) _____

40. How often do you place orders for PPE ?	<u>HPAI</u> <input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Other (specify)	<u>Rabies</u> <input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Other (specify)
41. Have you had to place any emergency orders ("extra ordinary") in the last year? If yes, for which products and how many?	Number: _____ Products: _____	
42. Under normal circumstances, how long does it take from the time you place an order to the time the supplies are received and available for use?	<input type="checkbox"/> _____ days <input type="checkbox"/> Don't know/not sure	
43. In the last year, did you have an order that took longer than usual to fill?	<input type="checkbox"/> Yes <input type="checkbox"/> No (go to Ques.46) <input type="checkbox"/> Don't know/not sure (go to Ques. 46)	
44. For this order, how long did it take from the time you placed the order until you received the supplies?		
45. What were the reasons for the delay in receiving the supplies?		
46. How often is a physical count of HPAI and Rabies supplies conducted in the facility?	<input type="checkbox"/> Once a year <input type="checkbox"/> Every ____ months <input type="checkbox"/> Never	
Distribution of HPAI and Rabies Supplies		
47. Is there an established schedule for distribution of HPAI and Rabies supplies to this facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
48. Are HPAI and Rabies supplies distributed together?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
a. If not, please diagram and describe how the different HPAI and Rabies supplies are distributed to the facility.		

<p>49. How are HPAI and Rabies supplies distributed? (Mode of transport) <i>Describe any differences in how the different supplies are delivered to the facility.</i></p>	<p> <input type="checkbox"/> Facility picks them up <input type="checkbox"/> Higher level delivers them <input type="checkbox"/> Manufacturer delivers them <input type="checkbox"/> Private supplier delivers them <input type="checkbox"/> Other (<i>specify</i>) _____ </p>
<p>50. Does the facility have a vehicle to pick up or delivering the supplies?</p>	<p> <input type="checkbox"/> Yes <input type="checkbox"/> No </p>
<p>51. Does the facility have the funds for fuel or to cover other costs of picking up the supplies?</p>	<p> <input type="checkbox"/> Yes <input type="checkbox"/> No </p>
<p>52. Describe any problems you may have experienced related to delivery of HPAI and Rabies supplies in the last year.</p>	
<p>Additional comments on distribution of HPAI and Rabies supplies:</p>	

VIII. LOGISTICS MANAGEMENT INFORMATION SYSTEM (LMIS) FOR HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

Recording, Reporting, and Use of Logistics Data	
<p>53. What type of form(s) does the facility use to monitor the quantities of HPAI and Rabies supplies in stock? <i>(Check all that apply and verify. Request blank copy of form if possible.)</i></p> <p>(If no, skip to Ques. 55)</p>	<p> <input type="checkbox"/> Stock cards <input type="checkbox"/> Stores ledgers <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> None </p>
<p>54. How is the information from these forms used? <i>(Check all that apply.)</i></p>	<p> <input type="checkbox"/> Calculate consumption of supplies <input type="checkbox"/> Calculate order quantities <input type="checkbox"/> Report quantities in stock to higher levels <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> Not used </p>
<p>55. Does the facility routinely record data on the quantities of HPAI and</p>	<p><input type="checkbox"/> Yes</p>

<p>Rabies supplies issued to lower level facilities? (If no or DK, skip to Ques. 57)</p>	<p><input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>56. What type of form(s) or registers does the facility use for recording the quantities of HPAI and Rabies supplies issued to lower level facilities? (Check all that apply and verify. Request blank copy of form if possible.)</p>	<p><input type="checkbox"/> Stock cards <input type="checkbox"/> Stores ledgers <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> None</p>
<p>57. Does the facility routinely record data on consumption (quantities of HPAI and Rabies supplies used)? (If no or DK, skip to Ques. 60.)</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure</p>
<p>58. What type of form(s) or registers does the facility use for recording consumption of HPAI and Rabies supplies ? (Check all that apply and verify. Request blank copy of form if possible.)</p>	<p><input type="checkbox"/> Stock cards <input type="checkbox"/> Stores ledgers <input type="checkbox"/> Daily registers <input type="checkbox"/> Log books <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> None</p>
<p>59. How is the information from these forms used? (Check all that apply.)</p>	<p><input type="checkbox"/> Calculate consumption of supplies <input type="checkbox"/> Calculate order quantities <input type="checkbox"/> Report quantities in stock to higher levels <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Not used</p>
<p>60. Does this facility send reports with the following information to a higher level? (Review a copy of the report and check all positive responses. If no, skip to Ques. 66)</p>	<p><input type="checkbox"/> Quantities of supplies in stock <input type="checkbox"/> Quantities issued to lower level <input type="checkbox"/> Consumption of supplies <input type="checkbox"/> Other (specify) _____</p>
<p>61. If yes, what is the name of the report(s) that are submitted to the higher level?</p>	<p><input type="checkbox"/> Name of report:: _____ <input type="checkbox"/> Name of report:: _____ <input type="checkbox"/> Name of report:: _____ <input type="checkbox"/> Don't know/not sure</p>
<p>62. How often are these reports sent? (Check all that apply)</p>	<p><input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Bimonthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Other (specify) _____</p>

63. Where are these reports sent? (Read list and check all positive responses.)	<input type="checkbox"/> DAH central level <input type="checkbox"/> FAO central level <input type="checkbox"/> Provincial Livestock Office/LDCC <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Other _____
64. Does this facility receive feedback from the higher level on the reports submitted?	<input type="checkbox"/> Yes <input type="checkbox"/> No
65. If yes, describe the type of feedback the facility receives on the reports sent to the higher level.	
66. Does the facility collect and report this logistics data through a manual, paper-based system or a computerized system?	<input type="checkbox"/> Manual/paper-based <input type="checkbox"/> Computerized <input type="checkbox"/> Does not report logistics data
67. If collection and reporting of logistics data is computerized, describe the software program/system used and how the data is collected and reported.	
68. What communication systems are available to the facility? (Check all that apply)	<input type="checkbox"/> Post <input type="checkbox"/> Telephone <input type="checkbox"/> Fax <input type="checkbox"/> Cell phone <input type="checkbox"/> E-mail <input type="checkbox"/> Internet dial up <input type="checkbox"/> Internet high speed <input type="checkbox"/> Other (specify)
69. Which of the communication system(s) are most reliable and most used for sending reports and for ordering HPAI and Rabies supplies?	<input type="checkbox"/> Post <input type="checkbox"/> Telephone <input type="checkbox"/> Fax <input type="checkbox"/> Cell phone <input type="checkbox"/> E-mail <input type="checkbox"/> Internet dial up <input type="checkbox"/> Internet high speed <input type="checkbox"/> Other (specify)

IX. AVAILABILITY OF HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

	Units of count	Managed at this facility? (Y/N)	Physical Count	Stockout on Day of Visit (Y/N)	Stock card available? (Y/N)	Stock card updated? (Y/N)	Balance on stock card	Stockout in last 6 months (Y/N)
PPE/Infection Control								
PPE Kits								
Masks	/box							
Goggles	/box							
Gloves (Large)	/box							
Gloves (Medium)	/box							
Gloves (Small)	/box							
Disinfectant (brand)	1 L							
HPAI								
Rapid antigen test kit	test /box							
VTM swabs	?/pack							
Universal VTM w/swab	vial							
Rabies								
Vaccine #1 (brand)	10 dose/vial							
Vaccine #2 (brand)	10 dose/via							
Vaccine #3 (brand)	10 dose/via							

	Units of count	Managed at this facility? (Y/N)	Physical Count	Stockout on Day of Visit (Y/N)	Stock card available? (Y/N)	Stock card updated? (Y/N)	Balance on stock card	Stockout in last 6 months (Y/N)
Dog collars (brand) #/box	Collar							
Xylazine (IM)	Vial							
Ketamine (IM)	Vial							
Pentobarbital for Euthanasia (IV)	Vial							
Syringe (3cc, 5cc, 10cc)	#/box							
Needles (21-23 gauge)	Vial							
<u>Reason/s for Stockout:</u>								
Product:_____ Explanation:_____								
Product_____ Explanation:_____								
Product:_____ Explanation:_____								
Product_____ Explanation:_____								
Product:_____ Explanation:_____								

X. STORAGE CONDITIONS AND PRACTICES

Interview the person responsible for managing the storeroom, observe stockkeeping practices, and inspect the storage area. Write the relevant comments and observations in the space provided.

	Yes/No/DK	Comments
Interview Questions with Person Responsible		
1. Do written guidelines for storing Animal Health supplies according to their specifications exist? <i>(e.g. guidelines for storage of vaccines, controlled substances, flammable or hazardous materials)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
2. Are these written guidelines available at the facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
3. Are damaged and/or expired supplies separated from usable supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
4. Are damaged and/or expired supplies removed from inventory and destroyed according to guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
5. Are written guidelines or SOPs for cold chain management available at this facility <i>(If yes, verify where guidelines or SOP manual is located in the facility)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
Observations of Stock keeping Practices and Storage Conditions		
6. Cartons and boxes are arranged with arrows pointing up (↑), and with identification labels, expiry dates, and manufacturing dates clearly visible.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Supplies are stored according to the first-to-expire, first-out (FEFO) practice in the facility.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Damaged and/or expired supplies are <u>separated</u> from usable supplies in the storeroom.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No expired products	
9. The facility makes it a practice to <u>remove</u> damaged and/or expired supplies <u>from inventory</u> .	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
10. Are cold-chain storage temperatures monitored and updated daily	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No charts/logs available <input type="checkbox"/> No cold chain items	

11. All cold chain items are stored within required temperature range <i>If no, list the items not stored correctly and how they were found.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No-	
12. Storage area is clean and maintained in good condition (e.g., clean, all trash removed)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
13. Storage area is dry, well-lit and well-ventilated (no signs of water penetration)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
14. Storage area is secured with a lock and key but is accessible during normal working hours.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
15. Storage area has lockable cupboards; access is limited to authorized personnel.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
16. Storage area has no sign of rodents or insect.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
17. Storage area has sufficient space to adequately store existing supplies.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
18. Have there been any problems with storage of Animal Health supplies at this facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, list the problems with storing HPAI and Rabies supplies (<i>Start with the highest priority.</i>)		
Additional comments on storage conditions and practices at the facility.		

Appendix E

Animal Health Center Questionnaire

**National Veterinary Services (NVS)
Pilot Program**

Supply Chain Assessment

**Sub-district/Animal Health Center
(AHC)
Questionnaire**

**Sub-directorate of Animal Disease Prevention and Control
Directorate of Animal Health/Ministry of Agriculture (DAH/MOA)**

**Food and Agriculture Organization of the United Nations (FAO)
Emergency Centre for Transboundary Animal Diseases (ECTAD)
ECTAD Programme in Indonesia**

INTRODUCTION OF THE ASSESSMENT TEAM

Ask for the person in charge at the Provincial/District Livestock Office and show the letter of introduction/ authorization from the MOA/DAH. Introduce all team members and ask the Provincial/District Livestock Office/Animal Health Center staff to introduce themselves.

Explain the objectives of the NVS Supply Chain Assessment and the purpose of the visit to the Provincial/District Livestock Office/Animal Health Center:

“Good day and thank you for receiving us today. My name is _____. My colleague(s) and I are representing the Ministry of Agriculture/Directorate of Animal Health and the Food and Agriculture Organization (FAO). With technical assistance of the USAID | DELIVER PROJECT, we are conducting an assessment of the logistics system for managing HPAI and Rabies prevention and control supplies for the Animal Health program. We are visiting Provincial and District Livestock Offices and selected Animal Health Centers in the NVS Pilot Program provinces.

The purpose of the visit today is to learn about the roles and responsibilities of the Provincial/ District Livestock Offices in financing, procurement, inventory management, storage, distribution and monitoring/reporting on HPAI and Rabies prevention and control supplies at the provincial, district and animal health center levels. We have prepared a structured questionnaire to guide our discussion today to help us understand how the logistics system for managing HPAI and Rabies prevention and control supplies functions. After the discussion, we would like permission to visit the Provincial/District Livestock Office **and** Animal Health Center storeroom to speak with the person(s) responsible for managing the stocks, and to observe stockkeeping practices and storage conditions for these supplies.

The results of the assessment will provide information for developing recommendations to strengthen the Animal Health logistics system to be able to ensure the continuous availability and quality of HPAI and Rabies Prevention and Control Supplies at the Provincial/District Livestock Offices and Animal Health Centers for NVS officers to be able to conduct HPAI and Rabies surveillance, prevention, IEC, and rapid response activities.

We would like to emphasize that this is not a supervisory visit and the performance of individual staff members is not being evaluated.”

Ask the person in charge of the Provincial/District Livestock Office/Animal Health Center and any other staff members present if they have any questions before proceeding with the assessment questions.

GENERAL INFORMATION

1. Name and Institution of Interviewer(s): <input type="checkbox"/> MOA/DAH <input type="checkbox"/> FAO <input type="checkbox"/> USAID DELIVER PROJECT <input type="checkbox"/> USAID DELIVER PROJECT <input type="checkbox"/> Other <input type="checkbox"/> Other	Name <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	Title <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
2. Date of Visit:	_____ Day / Month / Year	
3. Name of Facility:		
4. Province:		
5. District:		
6. Level of Facility:	<input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Subdistrict/AHC <input type="checkbox"/> Community /Village Level	

I. GUIDELINES FOR HPAI AND RABIES CONTROL SERVICES

1. Are written guidelines for HPAI Prevention and Control services available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
2. Are written guidelines for Rabies Prevention and Control services available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
3. Are there documented SOPs for implementation of HPAI prevention and control activities available in this facility? <i>(If yes, ask to see SOPs and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
4. Are there documented SOPs for implementation of Rabies prevention and control activities available in this facility? <i>(If yes, ask to see SOPs and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
5. Are there other documents (training materials, IEC material, etc.) for implementation of HPAI prevention and control activities available in this facility? <i>(If yes, ask to see SOPs and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
6. Are there other documents (training materials, IEC material, etc.) for implementation of Rabies prevention and control activities available in this facility? <i>(If yes, ask to see SOPs and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
7. Additional comments:	

II. GUIDELINES AND STANDARD OPERATING PROCEDURES FOR LOGISTICS MANAGEMENT OF HPAI AND RABIES SUPPLIES

8. Are there written guidelines or standard operating procedures (SOPs) for logistics management of Animal Health supplies (vaccines, drugs, consumables, PPE) available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication and go to question 8.a. If no, SKIP TO SECTION III)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
a. Do these include procedures for storage of Animal Health supplies (vaccines, drugs, consumables, PPE)? <i>(If yes, ask to see guidelines and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know /not sure

b. Do these include procedures for monitoring stock levels of supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
c. Do these include procedures for ordering and receiving supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
d. Do these include procedures for reporting on stock levels and consumption of supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
e. Do these include guidelines for disposal or destruction of damaged and expired supplies? <i>(If yes, ask to see guidelines and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure

III. GUIDELINES AND STANDARD OPERATING PROCEDURES FOR INFECTION PREVENTION AND CONTROL (IPC) AND INFECTIOUS WASTE MANAGEMENT

<p>9. Are there written guidelines on Infection, Prevention and Control (IPC) and management of infectious waste available in this facility?</p> <p>a. Infection prevention</p> <p>b. Use of protective gear</p> <p>c. Safe disposal of sharps (i.e., needles, etc.)</p> <p>d. Safe disposal of infectious waste</p> <p>e. Other (specify)</p> <p>_____</p> <p><i>Ask to see guidelines and note title and date of publication of each. If no IPC guidelines skip to #11</i></p>	<input type="checkbox"/>
10. Do the written guidelines include procedures for sample collection, packaging, and shipping available in this facility? <i>(If yes, ask to see guidelines and note title and date of publication)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
11. Have all veterinary officers and AHC workers been trained in IPC and management of infectious waste	<input type="checkbox"/> Yes <input type="checkbox"/> No
12. Do all facilities have adequate supplies for IPC for:	<input type="checkbox"/> Yes/ No <input type="checkbox"/> Yes/No
13. Do all facilities have adequate supplies for infectious waste management for:	<input type="checkbox"/> Yes/ No <input type="checkbox"/> Yes/No

b. In the event of an outbreak	
14. Additional comments:	

IV. LOGISTICS MANAGEMENT OF HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

15. Who in this facility is responsible for management of the HPAI and Rabies supplies?	<input type="checkbox"/> Stock Manager <input type="checkbox"/> Storekeeper <input type="checkbox"/> Veterinary Officer <input type="checkbox"/> Para-Vet <input type="checkbox"/> Other <input type="checkbox"/> Other (specify): _____
16. Does the facility have an established minimum stock level for HPAI and Rabies supplies at which orders need to be placed? <i>(If yes, write the minimum stock level)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
17. Does the facility have an established maximum stock level for HPAI and Rabies supplies above which the inventory level should not go? <i>(If yes, write the maximum stock level)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
Ordering and Receiving HPAI and Rabies Supplies	
18. Who determines what quantities of supplies to order for this facility?	<input type="checkbox"/> Stock Manager <input type="checkbox"/> Storekeeper <input type="checkbox"/> Veterinary Officer <input type="checkbox"/> Higher level authority <input type="checkbox"/> Other (specify) _____
19. What type(s) of data do you use to calculate how much to order? (Check all that apply.)	<input type="checkbox"/> Average monthly consumption (supplies data) <input type="checkbox"/> Quantities of stock in the facility <input type="checkbox"/> Maximum stock level <input type="checkbox"/> Number of animals treated/vaccinated (service data) <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Don't know/not sure

<p>20. What type of form(s) does the facility use for ordering and receiving HPAI and Rabies supplies? (Check all that apply and verify. Request blank copy of form if possible)</p>	<p> <input type="checkbox"/> Order book <input type="checkbox"/> Delivery note <input type="checkbox"/> Requisition/Issue voucher <input type="checkbox"/> Other (specify) _____ </p>
<p>21. Does the facility use a manual, paper-based or a computerized system for ordering and receiving HPAI and Rabies supplies? (If computerized, describe the computer software program used; how order quantities are calculated; how orders are requested and received.)</p>	<p> <input type="checkbox"/> Manual <input type="checkbox"/> Computerized </p>
<p>22. Where do you send the order for resupply of HPAI supplies? (Check all that apply.)</p>	<p> <input type="checkbox"/> Manufacturer <input type="checkbox"/> DAH central level <input type="checkbox"/> FAO central level <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Local supplier/private market <input type="checkbox"/> Donor <input type="checkbox"/> Other (specify) _____ </p>
<p>23. Where do you send the order for resupply of Rabies supplies? (Check all that apply.)</p>	<p> <input type="checkbox"/> Manufacturer <input type="checkbox"/> DAH central level <input type="checkbox"/> FAO central level <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Local supplier/private market <input type="checkbox"/> Donor <input type="checkbox"/> Other (specify) _____ </p>
<p>24. How often do you place orders for HPAI/Rabies Vaccines?</p>	<p> <input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Other (specify) _____ </p>
<p>25. How often do you place orders for HPAI/Rabies Drugs (e.g. Euthanasia drugs for dog)?</p>	<p> <input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months </p>

	<input type="checkbox"/> Other (<i>specify</i>) _____
26. How often do you place orders for HPAI/Rabies CONSUMABLES (e.g. Disinfectants, Needles/Syringes, and IPC supplies)?	<input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Other (<i>specify</i>) _____
27. How often do you place orders for PPE Kits ?	<input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Every 6 months <input type="checkbox"/> Other (<i>specify</i>) _____
28. How many emergency orders have you placed in the last year?	Number: _____
29. Under normal circumstances, how long does it take from the time you place an order to the time the supplies are received and available for use?	<input type="checkbox"/> _____ days <input type="checkbox"/> Don't know/not sure
30. In the last year, did you have an order that took longer than usual to fill?	<input type="checkbox"/> Yes <input type="checkbox"/> No (go to Ques.46) <input type="checkbox"/> Don't know/not sure (go to Ques. 46)
31. For this order, how long did it take from the time you placed the order until you received the supplies?	
32. What were the reasons for the delay in receiving the supplies?	
33. How often is a physical count of HPAI and Rabies supplies conducted in the facility?	<input type="checkbox"/> Once a year <input type="checkbox"/> Every ____ months <input type="checkbox"/> Never <input type="checkbox"/> Other (<i>specify</i>) _____
Distribution of HPAI and Rabies Supplies	
34. Is there an established schedule for distribution of HPAI and Rabies supplies to this facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No

35. Are HPAI and Rabies supplies distributed together?	<input type="checkbox"/> Yes <input type="checkbox"/> No
a. If not, please diagram and describe how the different HPAI and Rabies supplies are distributed to the facility.	
36. How do HPAI and Rabies supplies usually arrive at the facility? Describe any differences in how the different supplies are delivered to the facility.	<input type="checkbox"/> Facility picks them up <input type="checkbox"/> Higher level delivers them <input type="checkbox"/> Manufacturer delivers them <input type="checkbox"/> Private supplier delivers them <input type="checkbox"/> Other (<i>specify</i>) _____
37. Does the facility have a vehicle to pick up the supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No
38. Does the facility have the funds for fuel or to cover other costs of picking up the supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No
39. Describe any problems you may have experienced related to delivery of HPAI and Rabies supplies in the last year.	
Additional comments on distribution of HPAI and Rabies supplies:	

V. LOGISTICS MANAGEMENT INFORMATION SYSTEM (LMIS) FOR HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

Recording, Reporting, and Use of Logistics Data	
40. What type of form(s) does the facility use to monitor the quantities of HPAI and Rabies supplies in stock? <i>(Check all that apply and verify. Request blank copy of form if possible.)</i>	<input type="checkbox"/> Stock cards <input type="checkbox"/> Stores ledgers <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> None
41. How is the information from these forms used? <i>(Check all that apply.)</i>	<input type="checkbox"/> Calculate consumption of supplies <input type="checkbox"/> Calculate order quantities <input type="checkbox"/> Report quantities in stock to higher levels <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> Not used
42. Does the facility routinely record data on the quantities of HPAI and Rabies supplies issued to lower level facilities? <i>(If no, skip to Ques. 57)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
43. What type of form(s) or registers does the facility use for recording the quantities of HPAI and Rabies supplies issued to lower level facilities? <i>(Check all that apply and verify. Request blank copy of form if possible.)</i>	<input type="checkbox"/> Stock cards <input type="checkbox"/> Stores ledgers <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> None
44. Does the facility routinely record data on consumption (quantities of HPAI and Rabies supplies used)? <i>(If no, skip to Ques. 59.)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
45. What type of form(s) or registers does the facility use for recording consumption of HPAI and Rabies supplies ? <i>(Check all that apply and verify. Request blank copy of form if possible.)</i>	<input type="checkbox"/> Stock cards <input type="checkbox"/> Stores ledgers <input type="checkbox"/> Daily registers <input type="checkbox"/> Log books <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> None
46. How is the information from these forms used? <i>(Check all that apply.)</i>	<input type="checkbox"/> Calculate consumption of supplies <input type="checkbox"/> Calculate order quantities <input type="checkbox"/> Report quantities in stock to higher levels <input type="checkbox"/> Other (<i>specify</i>) _____ <input type="checkbox"/> Not used
47. Does this facility send reports with the following information to a higher level? <i>(Review a copy of the report and check all positive responses. If no, skip to Ques. 66)</i>	<input type="checkbox"/> Quantities of supplies in stock <input type="checkbox"/> Quantities issued to lower level <input type="checkbox"/> Consumption of supplies <input type="checkbox"/> Other (<i>specify</i>) _____

48. If yes, what is the name of the report(s) that are submitted to the higher level?	<input type="checkbox"/> Name of report:: _____ <input type="checkbox"/> Name of report:: _____ <input type="checkbox"/> Name of report:: _____ <input type="checkbox"/> Don't know/not sure
49. How often are these reports sent? (Check all that apply)	<input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Bimonthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Other (specify) _____
50. Where are these reports sent? (Read list and check all positive responses.)	<input type="checkbox"/> DAH central level <input type="checkbox"/> FAO central level <input type="checkbox"/> Provincial Livestock Office <input type="checkbox"/> District Livestock Office <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____
51. Does this facility receive feedback from the higher level on the reports submitted?	<input type="checkbox"/> Yes <input type="checkbox"/> No
52. If yes, describe the type of feedback the facility receives on the reports sent to the higher level.	
53. Does the facility collect and report this logistics data through a manual, paper-based system or a computerized system?	<input type="checkbox"/> Manual <input type="checkbox"/> Computerized <input type="checkbox"/> Does not report logistics data
54. If collection and reporting of logistics data is computerized, describe the software program/system used and how the data is collected and reported.	
55. What communication systems are available to the facility? (Check all that apply)	<input type="checkbox"/> Post <input type="checkbox"/> Telephone <input type="checkbox"/> Fax <input type="checkbox"/> Cell phone <input type="checkbox"/> E-mail <input type="checkbox"/> Internet dial up <input type="checkbox"/> Internet high speed <input type="checkbox"/> Other (specify) _____

<p>1. Which of the communication system(s) are most reliable and most used for sending reports and for ordering HPAI and Rabies supplies?</p>	<ul style="list-style-type: none"><input type="checkbox"/> Post<input type="checkbox"/> Telephone<input type="checkbox"/> Fax<input type="checkbox"/> Cell phone<input type="checkbox"/> E-mail<input type="checkbox"/> Internet dial up<input type="checkbox"/> Internet high speed<input type="checkbox"/> Other (specify)
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VI. AVAILABILITY OF HPAI AND RABIES PREVENTION AND CONTROL SUPPLIES

	Units of count	Managed at this facility? (Y/N)	Physical Inventory	Stockout on Day of Visit (Y/N)	Stock card available? (Y/N)	Stock card updated? (Y/N)	Balance on stock card	Stockout in last 6 months (Y/N)
PPE/Infection Control								
PPE Kits								
Masks	50/box							
Goggles	50/box							
Gloves (Large)	50/box							
Gloves (Medium)	50/box							
Gloves (Small)	50/box							
Disinfectant (brand)	1 L							
HPAI								
Rapid antigen test kit	# tests /kit							
VTM swabs	?/pack							
Universal VTM w/swab # vials/box	vial							
Rabies								
Vaccine #1 (brand)	vial							
Vaccine #2 (brand)	vial							
Vaccine #3 (brand)	vial							
Dog collars (brand) #/box	collar							

	Units of count	Managed at this facility? (Y/N)	Physical Inventory	Stockout on Day of Visit (Y/N)	Stock card available? (Y/N)	Stock card updated? (Y/N)	Balance on stock card	Stockout in last 6 months (Y/N)
Drug Name #1 /concentration	vial							
Drug Name #2 /concentration	vial							
Drug Name #3/concentration	vial							
Syringe (3cc, 5cc, 10cc)	#/box							
Drug Name/concentration	vial							
<u>Reason/s for Stockout:</u> Product:_____ Explanation:_____ Product_____ Explanation:_____ Product:_____ Explanation:_____ Product_____ Explanation:_____ Product:_____ Explanation:_____								

X. STORAGE CONDITIONS AND PRACTICES

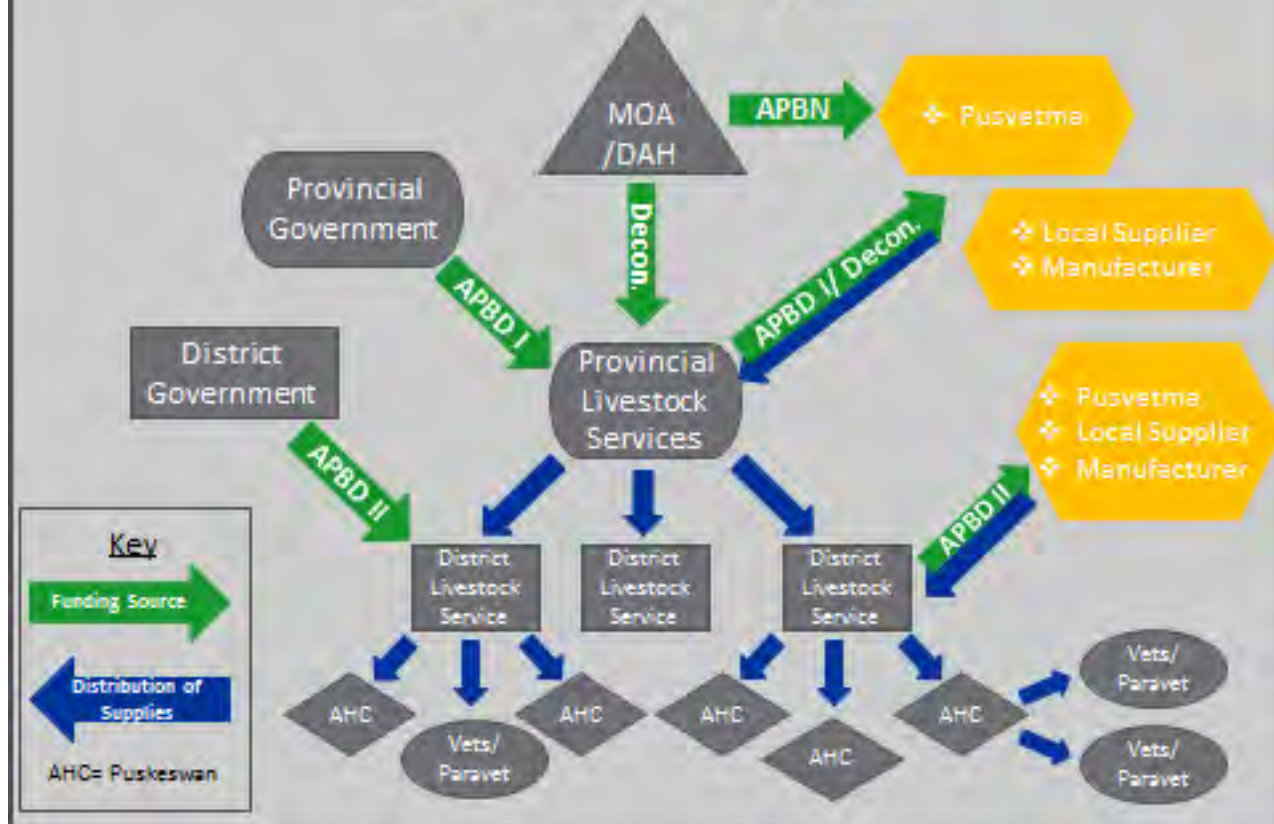
Interview the person responsible for managing the storeroom, observe stockkeeping practices, and inspect the storage area. Write the relevant comments and observations in the space provided.		
	Yes/No/DK	Comments
Interview Questions with Person Responsible		
1. Do written guidelines for storing Animal Health supplies according to their specifications exist? <i>(e.g. guidelines for storage of vaccines, controlled substances, flammable or hazardous materials)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
2. Are these written guidelines available at the facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
3. Are damaged and/or expired supplies separated from usable supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
4. Are damaged and/or expired supplies removed from inventory and destroyed according to guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
5. Are written guidelines or SOPs for cold chain management available at this facility <i>(If yes, verify where guidelines or SOP manual is located in the facility)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
Observations of Stockkeeping Practices and Storage Conditions		
6. Cartons and boxes are arranged with arrows pointing up (↑), and with identification labels, expiry dates, and manufacturing dates clearly visible.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
7. Supplies are stored according to the first-to-expire, first-out (FEFO) practice in the facility.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
8. Damaged and/or expired supplies are <u>separated</u> from usable supplies in the storeroom.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No expired products	
9. The facility makes it a practice to <u>remove</u> damaged and/or expired supplies <u>from inventory</u> .	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	
10. The facility makes it a practice to follow guidelines for disposal and/or destruction of damaged and/or expired supplies. <i>(Verify the practices for disposal or destruction of damaged or expired supplies)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK	

11. Are cold-chain storage temperatures monitored and updated daily	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No charts/logs available <input type="checkbox"/> No cold chain items	
12. All cold chain items are stored within required temperature range <i>If no, list the items not stored correctly and how they were found.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK-	
13. Storage area is clean and maintained in good condition (e.g., clean, all trash removed)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
14. Storage area is dry, well-lit and well-ventilated (no signs of water penetration)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
15. Storage area is secured with a lock and key but is accessible during normal working hours.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
16. Storage area has lockable cupboards; access is limited to authorized personnel.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
17. Storage area has sufficient space to adequately store existing supplies.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
18. Have there been any problems with storage of Animal Health supplies at this facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, list the problems with storing HPAI and Rabies supplies (<i>Start with the highest priority.</i>)		
Additional comments on storage conditions and practices at the facility.		

Appendix F

Government Funding, Procurement, and Distribution System for Animal Health Supplies

Government Funding, Procurement and Distribution System



Appendix G

MOA Planning, Budgeting, and Procurement Timeline

MOA Planning, Budgeting, and Procurement Timeline

			2012												2013											
Activity		Funding Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Planning and Budgeting	DAH collects / review proposals for following year from Provinces using most recent data (Data typically at least one year old)	APBN																								
	DAH collects/ reviews proposals for following year from sub-directorates and compiles with provincial proposals for DAH Proposal	APBN																								
	Proposal submitted to Head of Planning Bureau at the D.G. level (Unit 4)	APBN																								
	D.G proposals compiled for MoA and Bureau of Planning. Proposal submitted to Bappenas (Unit 3)	APBN																								
	MoA budget reviewed by Bappenas and Parliament for following year	APBN																								
	Budget Ceiling approved by Parliament for following year	APBN																								
	MoA budget details finalized - Process of finalization includes meetings with Provincial technical and planning teams	APBN																								
	Budget signed by DGs, MOA and MoF.	APBN																								
	DIPA released to province Dec 20-25th and given to teams in province for implementation	APBN																								
	Provincial and District Program planning and budgeting	APBD-1/APBD-2																								
Budgeting and Finalization	APBD-1/APBD-2																									
Procurement	Funding allocated to DAH, Province and Districts for Procurement based on DIPA	APBN/ APBD-1 /APBD-2																								
	Commodities Procured and Delivered based on DIPA	APBN/ APBD-1 /APBD-2																								

FY13 govt planning begins
Forecast animal health supply needs
using 2011 historical services data,
population data, and 2013 program targets

FY13 budget
approved

FY13 funding allocated

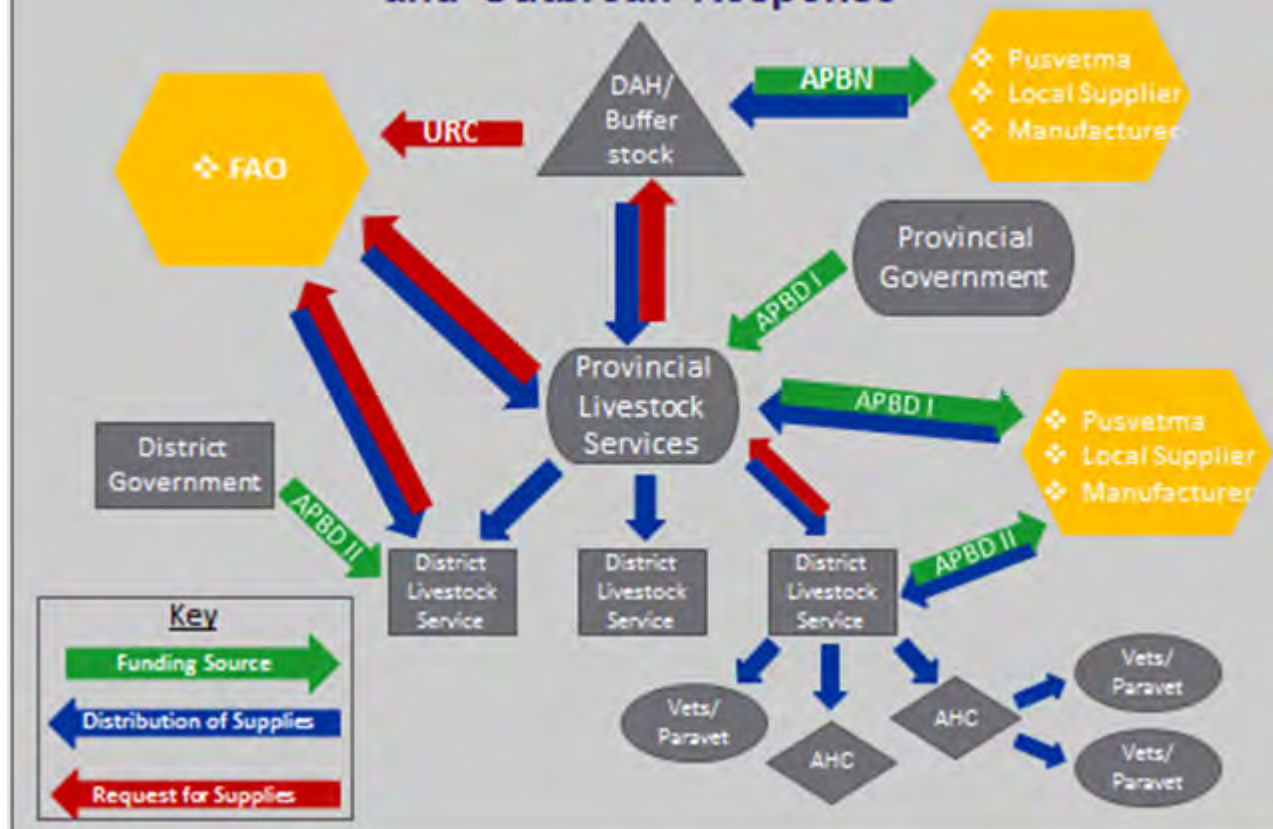
FY13
Procurement

Supplies
delivered

Appendix H

Distribution System for Special Requests and Outbreak Response

Distribution System for Special Requests and Outbreak Response



Appendix I

Stakeholder Debriefing: Supply Chain Assessment for the National Veterinary Services (NVS) Pilot Program, March 22, 2013



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Supply Chain Assessment for the National Veterinary Services (NVS) Pilot Program

Stakeholder Debriefing

Directorate of Animal Health, Ministry of Agriculture
Republic of Indonesia



March 22, 2013



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Presentation Outline

- Overview of principles of supply chain management
- NVS supply chain assessment
 - Scope and objectives
 - Key assessment findings and recommendations



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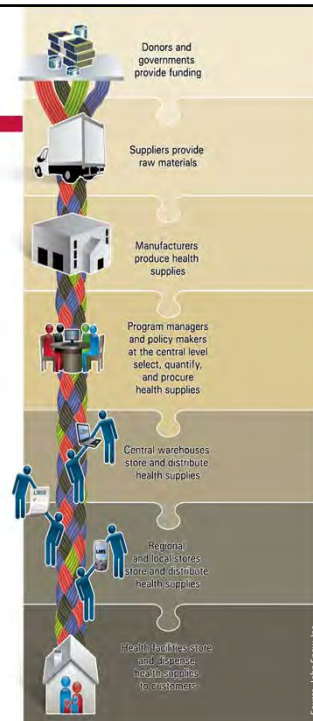
USAID | DELIVER PROJECT support to FAO and the NVS Pilot Program

- Strengthen supply chain management of HPAI and Rabies prevention and control supplies for the NVS pilot program in three provinces
- Build capacity for supply chain management at central, provincial, district and AHC levels
- Proposed Activities and Timeline: Feb-Dec 2013

What is a supply chain?



- A **supply chain** is a network of people and organizations at different levels undertaking activities required to move products from suppliers to customers.
- **Management of a supply chain** involves linking all people, activities, resources, and information along the supply chain into a cohesive and coordinated whole from top to bottom.



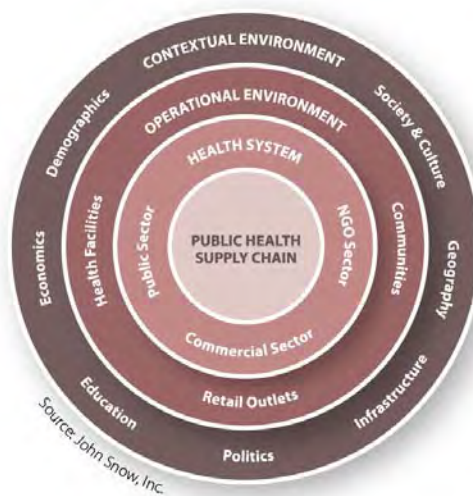
Purpose of a Supply Chain

The Six Rights

- the **Right Products**
- in the **Right Quantities**
- in the **Right Condition**
- delivered to the **Right Place**
- at the **Right Time**
- for the **Right Cost.**

“No Product? No Program.”

Supply Chains Operate within a Broader Environment



- Public health supply chains operate within a country's health system, and its operational and contextual environments
- Public health supply chains are critical, but affected by many factors
- Understanding the context surrounding the supply chain enables a better understanding of risks and opportunities

Six key characteristics of a well-functioning supply chain

- Clarity of roles and responsibilities
- Streamlined processes
- Visibility of logistics information
- Flexibility/responsiveness
- Trust and collaboration
- Alignment of objectives

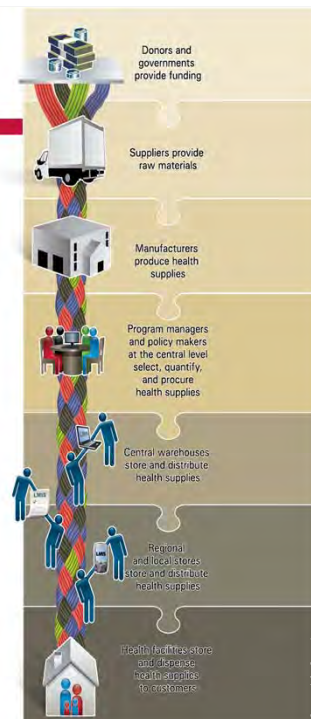


How Can We Build Strong Supply Chains?

- Strengthen local capacity
- Maximize effective use of resources
- Increase accountability at all levels
- Develop a common vision within a cohesive organizational structure
- Linking supply and demand through a functioning LMIS

And...

- Ultimately, improve product availability for customers





What is a Logistics Management Information System (LMIS)?

An LMIS **collects, organizes, and reports** data on the availability and use of supplies that can be used to make decisions

Three Essential Logistics Data

1. Stock on Hand (SoH)

- Usable quantities of supplies in stock



2. Consumption

- Quantities of supplies that have been used

3. Losses/Adjustments

- Quantities of supplies that have been removed from stock that were not consumed (e.g. expired, defective, damaged, lost)
- Quantities of supplies received from a source other than through the established distribution system (e.g. transferred to/from another facility or program)

LMIS Records and Reports

- **LMIS Records – 3 types**

- Stock-keeping record (quantities in stock)
- Consumption record (quantities used)
- Transaction record (quantities issued and received)



- **LMIS Reports**

- Forms and procedures for collecting, aggregating, and communicating logistics data from lower levels to higher levels in the supply chain



Purpose of an LMIS



- Provides the data required to monitor consumption and quantities of supplies in stock at each facility, at each level, and at national level
- Provides data needed for forecasting, and for informing budgeting and procurement decisions
- Provides data for determining quantities of supplies to distribute to lower levels

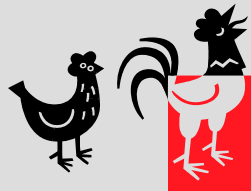
Use of LMIS data for decision-making

- Monitor quantities of supplies in stock to maintain appropriate stock levels at facilities and take corrective actions to avoid stockouts and overstocking
- Calculate quantities to distribute and ensure timely re-supply to facilities
- Identify product use and product quality issues
- Improve forecasting of supply needs
- Maximize efficient use of resources for procurement of supplies



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Supply Chain Assessment for the NVS Pilot Program



March 4-27, 2013



Purpose and Objectives

- Collect and document information on the structure, policies, and performance of the NVS supply chain for HPAI and rabies supplies
- Conduct in-country assessment of supply chain for HPAI and rabies prevention and control supplies at central level and NVS pilot program areas
- Document assessment findings and recommendations in technical report to be disseminated to stakeholders

Assessment Team Members

- MOA/DAH
 - Drh. Pebi Purwo Suseno, Sub-directorate for Animal Disease Prevention and Control
 - Drh. Retno Widiastuti, URC (formerly CMU)
- FAO
 - Margaretha Kristanti, National Liaison Officer/Local Government
 - Akbar Kusumanegara, DCC Data Encoder
- USAID | DELIVER PROJECT
 - Claudia Allers, Technical Team Leader
 - Ariella Bock, Monitoring & Evaluation Technical Advisor
 - Dr. Anton Widjaya, Consultant
 - Juhartini, Consultant

Assessment Methodology

- Reviewed related NVS Pilot program policy, technical documents, and training material
- Conducted central level key informant discussions
- Visited FAO warehouses and DAH stores in Jakarta
- Conducted field visits in Bali and West Sumatera (Provincial and District Livestock Services, and AHCs)
 - Interviewed provincial and district managers and staff, observed stock keeping practices and storage conditions, and collected logistics data using assessment tools.

Supply Chain Areas Assessed

- NVS organizational structure, policy and plans
- Financing for HPAI and rabies supplies
- Forecasting HPAI and rabies supply needs
- Budgeting and procurement process and timeline for HPAI and rabies supplies
- Distribution system
- Storage conditions and practices
- Inventory management policies and procedures
- LMIS for HPAI and rabies supplies





Key Findings



NVS Organizational Structure, Policy and Plans

- FAO supported NVS activities are being implemented through the DAH structure and disease control activities are underway
- Director General decree on guidelines for veterinary services exist (November 2011)
- But...
 - Level of institutionalization of Veterinary Services varies across provinces and districts
 - Procurement, distribution and management of supplies required to provide these services are not addressed within guidelines

Financing for HPAI and Rabies supplies

- Multiple government sources of funding for supplies, allocated on an annual basis (APBN, Decon, APBD I, APBD II)
 - Unclear whether funding amounts are sufficient to cover supply needs for HPAI and rabies prevention and control activities
- FAO no longer provides financing for procurement of supplies.
 - Donated HPAI supplies (PPE kits and supplies, AI antigen test kits) in stock at FAO warehouses available on request from provinces and districts



Forecasting HPAI and rabies supply needs

- Estimating supply needs is driven by national/ programmatic targets, population data and realization rates
- Data on quantities of supplies in stock and actual consumption is not used for forecasting at any level
- Vaccine wastage or quantities of products that are damaged, expired or otherwise unusable are not accounted for in forecasts
- Forecasts over/under-estimate supply needs



Forecasting HPAI and rabies supply needs

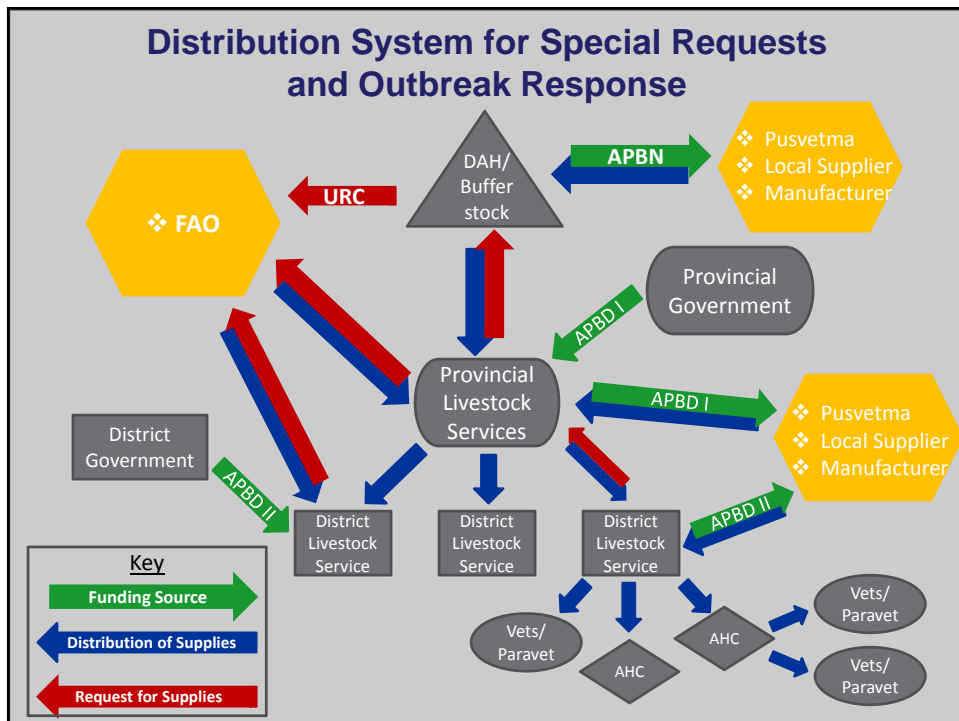
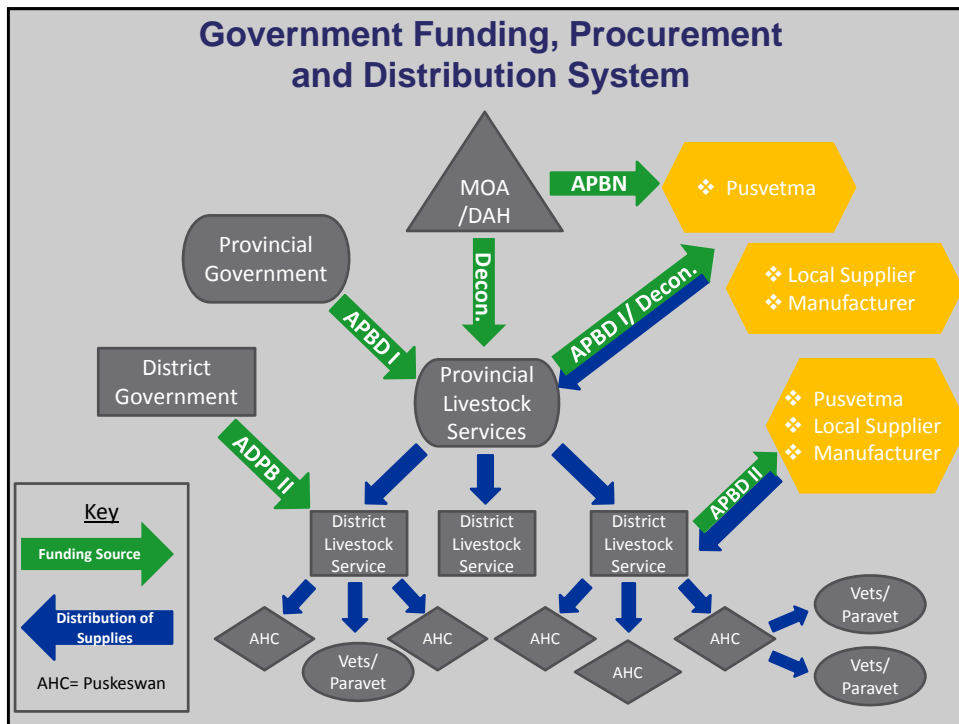
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Budgeting and procurement process and timeline



- Government budget allocations are used for one time procurement of supplies
 - Staggered shipments not applied
- Limited ability to make adjustments in the products or quantities to be procured once budget approved
- Timeline from budget approval to procurement and delivery of supplies varies



Distribution system

- Multiple distribution mechanisms used, but no established delivery schedule for supplies
- Distribution of some supplies may be covered for delivery to province, but not to lower levels
- Requirements to utilize temperature monitoring devices to ensure quality of cold chain items during transport not included in supplier contracts
- Staff lack appropriate skills to maintain quality of supplies during transport between levels



Storage conditions and practices



- Supplies are stored in offices or other areas not designed or equipped for storing health supplies
- Sufficient storage space available in most locations, but not utilized efficiently
- Products stored in multiple locations
- Staff assigned to manage storerooms are not trained in basic storage practices
- No written storage guidelines or SOPs

Basic storage practices are not applied...



Animal health supplies at risk of deterioration and wastage



Cold Chain Storage DELIVER PROJECT

- Cold storage space sufficient, but not utilized correctly
- Inadequate monitoring and management of items that require cold chain storage
- Inappropriate equipment in use
- Equipment not properly maintained
- Misplacement of products in cold storage
- Expired products not separated from usable stock



Inventory management policies and procedures

- Basic stockkeeping practices not observed
- No written guidelines or SOPs for ordering/ receiving/ issuing or monitoring supplies
- No standardized forms or procedures for requisition and issuing stock between central, provincial, district and AHC levels



LMIS for HPAI and rabies supplies

- Data on quantities of supplies distributed to lower levels is available
- Data on quantities of items received from higher levels or supplier is also recorded
- Actual quantities of supplies in stock rarely verified through physical count
- No standardized procedures for collection, reporting, and use of logistics data for HPAI and rabies supplies



Preliminary Recommendations and Next Steps



- Identify staff at each level who will be responsible for storing supplies, for collecting and reporting logistics data, and for monitoring status of supplies
- Conduct LMIS design workshop with selected staff from central, provincial, district and AHC levels
- Develop standard operating procedures (SOP) and job descriptions for implementing LMIS
- Conduct LMIS training based on SOPs
- Develop monitoring and supportive supervision plan for implementation of LMIS

2. Conduct de-junking exercise in NVS pilot areas

- Clean and organize products in NVS storage areas
- Conduct an inventory of HPAI and rabies supplies (including quantities and expiration dates), and other items in storage area
- Obtain approval for removal of damaged, expired or otherwise unusable items
 - Arrange for proper disposal of all unusable items
- Obtain appropriate storage equipment (pallets, shelving, locked cupboards) for NVS storage areas

3. Incorporate LMIS data in government planning and budgeting process

- Utilize logistics data on consumption and quantities of supplies in stock for forecasting future supply needs together with population and services data

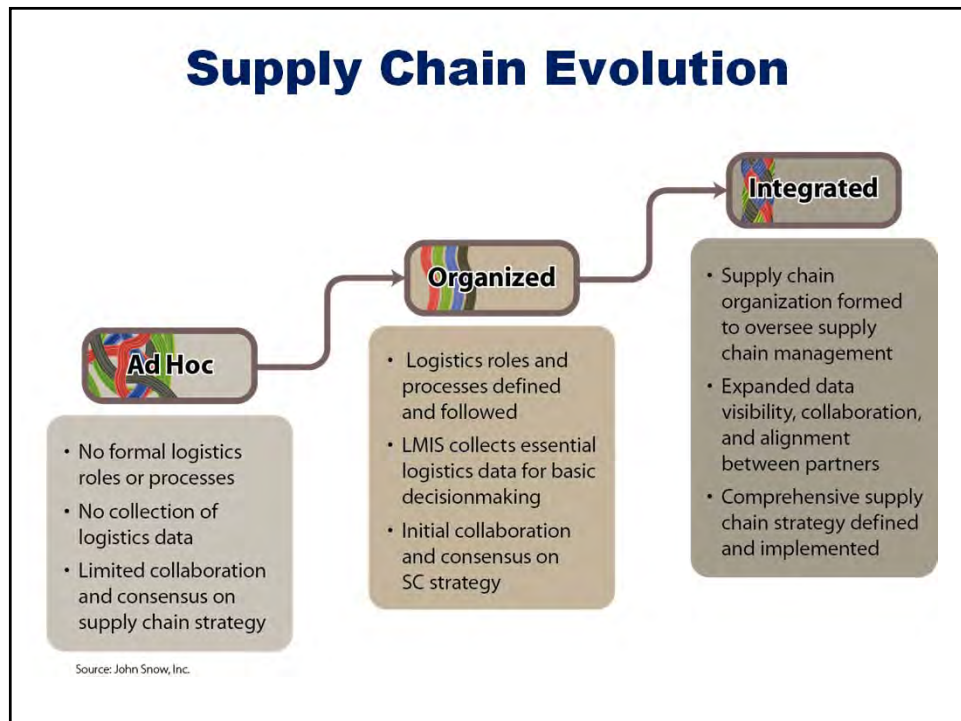
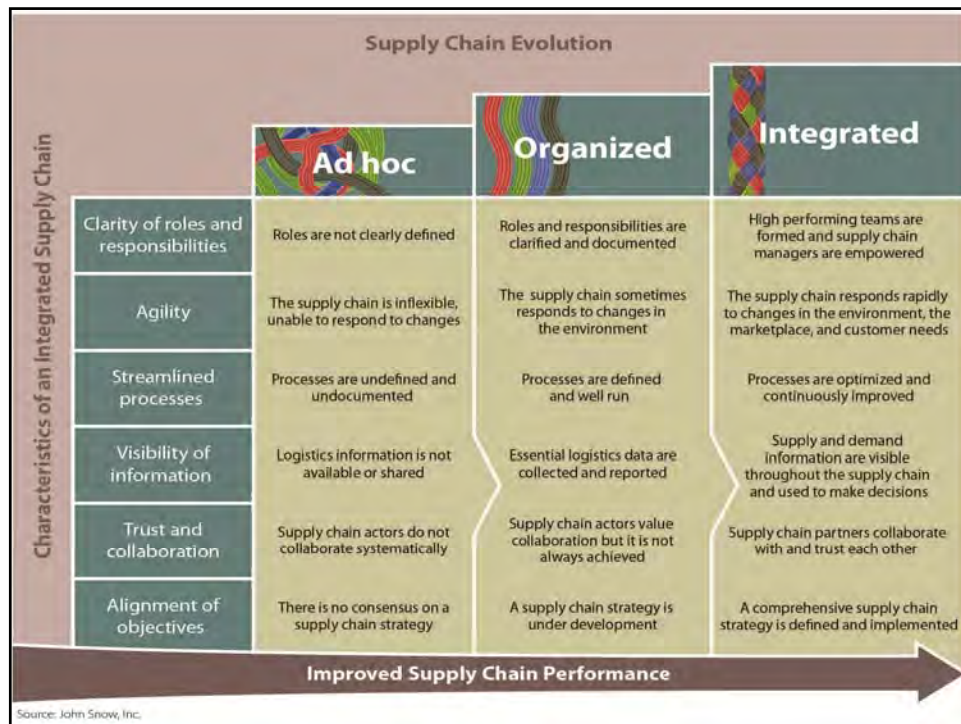


4. Conduct advocacy and socialization on importance of using logistics data and good logistics management practices



**TERIMA
KASIH!!!**





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