

INSTITUTIONAL AND LEGAL MEASURES TO COMBAT AFRICAN SWINE FEVER

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INTRODUCTION

African Swine Fever (ASF) is a viral disease of pigs which can have devastating effects on a country's economy, agriculture, and food security. The disease, which has nearly a 100% mortality rate, is transmitted to domestic pigs by warthog ticks and by contact with other infected pigs or pig material. Although there is no vaccine against ASF, there are measures that can be taken – both before and after the appearance of the disease – that can drastically reduce the scope of an outbreak and limit the harm it causes. This document outlines the major institutional and legal elements governments should consider in preparing for and reacting to an outbreak of ASF. It was prepared by the Development Law Service of the Food and Agriculture Organization (FAO) with the input of FAO's Animal Health Division, based on information collected under the auspices of the regional Technical Co-operation Project, *Enhancing Prevention Capacities for Emergency Intervention against African Swine Fever in West Africa* (TCP/RAF/7822).

This document is intended neither to describe the current situation in at-risk countries nor to tell governments what to do. The former would be difficult in any event because with the upsurge in international travel, materials of all kinds – including those that may spread ASF – are easily dispersed throughout the world, and thus every country may be at risk. And the latter is neither feasible nor desirable, since the political, cultural, and economic landscape in each country will affect the choices that are available to and that may be decided upon by policymakers. We recommend therefore that the information contained in this document be considered a checklist for planners interested in improving their ability to respond rapidly and effectively to ASF. And although the report outlines some measures that are distinct to ASF, some other measures may be useful in the consideration of other diseases.

Some countries will be able to put in place all the elements outlined in *Part I: Elements To Be in Place Before an Outbreak*, or may already have implemented most of them. Other countries will succeed with only a few. Once the disease is detected, some countries will be able to put into effect all the measures outlined in *Part II: Actions To Be Taken After Outbreak*, and others only a fraction. In whatever case, the rapidity with which countries act, and the scope of their reaction, will vary, for reasons already mentioned.

One final note: some elements in Part I also appear in Part II. For example, public awareness is both an element that should be in place long before there is an epizootic, as well as something that should be continued and strengthened (with updated information) once the disease appears in the territory. Similarly, legislation is not only something that needs to be enacted once there is an emergency, but is something that countries ought to collect, assess, and prepare long before the outbreak of an animal disease.

PART I – ELEMENTS TO BE IN PLACE BEFORE AN OUTBREAK

1.1 Development of an Emergency Plan

The most important step for a government to take, long before any ASF threat ripens, is to prepare an emergency plan. The purpose of a plan is to ensure that it is not just when disaster strikes that government and citizens decide who will take action and what action will be taken. Rather, the implicated players and their roles are considered and defined well in advance in the plan. The FAO publication, *Rinderpest Emergency Preparedness Planning: A Manual to Assist in Preparation of National Rinderpest Emergency Plans*, is a useful tool for countries wishing to establish an emergency plan for animal diseases. Although it is organized around rinderpest rather than ASF, it applies broad principles of disease control and recommends general strategies for policymakers interested in establishing emergency preparedness plans.

The task of developing an emergency plan may be accorded to an already established agency or committee – such as a national disaster organization, *Direction de la protection civile*, or emergency preparedness committee; or, if it does not already exist, such an organization or committee may have to be created. It goes without saying that farmers and farmers' organizations should be involved from the very start in the preparation of the plan, so that upon an outbreak they do not feel that measures are being imposed on them in a top-down fashion.

Box 1: Ghana's National Disaster Management Organization

The National Disaster Management Organization (NADMO) of Ghana was established by Act of Parliament in 1996 with the mandate of “manag[ing] disasters and similar emergencies in the country.” Its orientation is toward three main goals: disaster prevention, harm mitigation, and risk reduction. Among its seven sub-committees is one on Pest and Insect Infestation Disasters, made up of representatives of commodity boards, university faculties of agriculture, the Ministry of Food and Agriculture (plant protection, veterinary services, animal production, and forestry departments), the Ministry of Health, the Environmental Protection Agency, research institutes, NGOs, the Police Service, NADMO itself, and the Ministry of the Interior. The Sub-committee, which meets regularly, has been tasked with the responsibility of preparing a detailed emergency plan to respond to outbreaks of all possible pests and diseases that may affect Ghana, including African Swine Fever.

1.1.1 Elements of a Plan

Although each country's emergency plan for ASF will differ, some elements should always be included. For example, there should be a detailed description of the disease, a resource inventory (of personnel, equipment, and legislation), a synopsis of government policy toward the disease, and an action plan. The plan should specify the composition of the emergency committee

or task force and clearly define the participants' roles. Although the emergency agency or committee will be responsible for the overall co-ordination and mobilization of activities taken against the disease, specific tasks in the action plan must be assigned to the implicated agencies and groups. For example, the police service may be responsible for setting up road blocks and monitoring the movement of animals; the Ministry of Agriculture may be mobilized to do outreach to farmers; and so forth. The plan should outline what officials in the government hierarchy should do upon appearance of the disease (i.e., inform police and local authorities, livestock associations, and the press; collect information and report it regionally and internationally; and institute control measures).

The emergency plan should also contain detailed instructions on certain more complex issues. For example, since compensation of farmers will be an essential part of the strategy to combat ASF (this point will be discussed below), issues such as the valuation of animals will have to be resolved beforehand. Will compensation be in money or in kind? What percentage of the value of the lost stock will be awarded? Will the compensation package be altered if there is a prolonged period of quarantine and prices have gone up by the time of restocking? How will farmers' claims for compensation be verified? Answers to these and other questions should be decided ahead of time and addressed in the emergency plan.

The best emergency plans embody a two-part strategy, which mirrors the organization of this document – i.e., how to be ready for the disease before it appears and how to react effectively once it does arrive. In the parlance of emergency preparedness, this consists of *early warning* and *early reaction*. As the terms suggest, a legal and administrative environment must be created so that upon appearance of the disease, it can be quickly identified and the relevant information can be passed on to the necessary persons or agencies for action. The plan should provide for at least the following elements to facilitate early warning: sensitized farmers; well-trained, mobile, and active extension agents or field staff; and a system of disease identification, tracking, and reporting. Early reaction, by contrast, relies upon a committee or organization with the clear mandate to combat the disease; a series of contingency plans to be applied where the disease appears, based on an inventory of the resources available; diagnostic facilities for the identification of the disease; and a legal and administrative framework that facilitates rapid reporting and effective control once the outbreak is in full swing.

1.1.2 Cultural and Other Factors

As suggested earlier, the precise elements of a particular country's emergency plan to deal with ASF will depend on a multitude of factors, from the economic to the cultural and social. In developing the emergency plan, countries should consider whether the following factors may affect the plan's contents and implementation:

Government Administration

The nature of the plan – and for that matter the question of whether there is to be only one plan or several – will depend on the country's system of government. Where there is a strong central government, a unitary plan is required and is most likely to ensure an effective emergency response. Where there is a federal system, regions, states, or districts may require their own plans, depending on the degree of autonomy that they exercise generally and can be expected to exercise in the case of an emergency. And where there is no federal system but rather a central

government that has decentralized power to its political subdivisions, regions or districts may opt to develop their own plans to ensure that action can be taken, or such plans may even be required by law. In our view, unless the country is so vast that central co-ordination is difficult, the optimal strategy is for the smaller political subdivisions to cede control of epizootics to the national committee. Even where each state or region has its own plan, these should be closely co-ordinated with the national one. It is not during an emergency that regions, districts, or states should be exercising autonomous action.

Chain of Command

In some countries, veterinary officials – whether nurses, surgeons, or assistants – are well spread through the hierarchy of the Ministry. Elsewhere, there may be a lack of veterinary expertise in certain regions, for example where veterinarians are unwilling to be assigned to the rural areas, or where there are no longer specifically crops or veterinary extension agents, but just plain extension agents. In either case, it is important to assess how well the chain of command will function in the case of an emergency. Is it possible that in the absence of a veterinary expert, the initial appearance of the disease will not be greeted with the alarm it should? Or are all Ministry staff sufficiently sensitized to take seriously a farmer's report that most of his pigs are dead and dying?

The best strategy to ensure that the chain of command will facilitate both early warning and early response is twofold: to carry out continual training and awareness programmes to ensure that veterinary workers (public and private) and extension agents are informed of the disease, its symptoms, and its seriousness; and to prepare standing orders informing these agents exactly whom they should notify and how, in the case of the appearance of the disease. The standing orders should also contain instructions on immediate measures that can be taken even before instructions arrive from the central authority.

Swine Husbandry

The aetiology of the disease in a particular country will determine the appropriate strategies for combating it. For example, if the disease is endemic in domestic pig populations, regulations strictly controlling ingress and egress to farms, and prohibiting the movement of animal products, will therefore be indicated. Are domestic pigs allowed to roam free and thus acquire ticks from wild suid burrows? Local laws prohibiting animals from roaming and requiring them to be tethered may be the answer.

In addition to how swine are raised, livestock movement patterns – due to transhumance, the movement of nomadic populations, trading, smuggling, and civil disturbances – should be taken into account. By assessing whether any of these apply, planners will be able to determine the appropriate measures that should be embodied in the emergency plan.

Culture and Related Factors

In most cases, ASF will strike countries in which a large proportion of the population lives a relatively rural lifestyle, and therefore traditional customs and practices may come into play. Some of the issues to be considered under this rubric are:

- Religion: is there a Muslim population and if so, what might its reaction be to a swine disease?
- Gender: are the pig owners male or female, and has outreach therefore been targeted properly? Might other gender issues be triggered, such as women being affected disproportionately if there are no pigs available for dowries?
- Hospitality: in some cultures, a visit by an honoured stranger obligates the person receiving the visitor to offer a gift in thanks. Are farmers hesitating to call the veterinary officer to view sick animals because they know they cannot afford to offer another piglet for the veterinarian to carry away under his/her arm?
- Cross-border communities: does the same ethnic group live on both sides of a national or state border? Is there a lot of cross-border informal traffic, for markets, weddings, or due to civil strife? What is the disease status “on the other side”?
- Environment: is there a land shortage or drought? Are there any other factors that will hamper any quarantine measures?
- Attitude toward government: how do people view the government – helpful, antagonistic, corrupt? What might happen when government agents show up announcing they intend to slaughter some farmers’ animals? Can government agents far from central control be trusted to impose fines and carry out orders?

Some or all of these issues may have to be taken into account in designing an emergency plan that will be most effective in the particular context.

1.2. Funding

1.2.1 Costs

What a government facing an outbreak of ASF can afford and what it thinks it can afford may be quite different. In particular, governments may balk at the suggestion to compensate farmers for their livestock losses, claiming that funds are short. However, if compensation does not form the kernel of a country’s reaction to an outbreak of ASF, then the consequent costs – such as farmers’ economic losses, increases in prices to consumers (of pigs and pork products), reductions in exports (of these items as well as other products, due to importing countries’ restrictions), necessity of employing recurring measures to deal with the disease once it becomes endemic (as it can do if not eradicated), and the decline in the food security of the population – may be greater than those associated with the implementation of a rapid and simple compensation scheme. The contrast of the experience in Côte d’Ivoire – where government after only a brief delay implemented a compensation programme set at 1/3 the value of each pig lost, and where the disease was fully eradicated – versus that in Cameroon – where government at a late stage offered a small symbolic financial award to farmers, and where the disease has remained endemic – argues for including compensation as the linchpin of any ASF emergency plan.

In addition to the compensation programme, a government must consider whether and how well it can meet the other necessary expenses that will arise in connection with the disease. Some

costs are already more-or-less subsumed in the regular workings of the government. The civil servants (veterinary staff, extension agents) who will be called on to respond to the disease should be remunerated sufficiently that they will carry out their duties with professionalism, honesty, and motivation. Field agents must be able to move around within their districts or regions. Laboratories must have skilled staff and sufficient equipment, or funds should be available for external laboratory fees. Upon an outbreak of ASF, all these elements will be relied upon, and therefore they should be in place well before the disease appears.

Once the disease is in the territory, other expenses may arise. For example, private veterinarians may be impressed into service as agents of the government, and they will have to be remunerated for their work. The government may want or need to subsidize the cost of certain products such as disinfection materials or materials for proper burial of animal carcasses. Communication costs with other countries may increase.

1.2.2 Availability and Sources of Funds

The national legislature need not balk at shouldering the full burden of the associated costs, as there are myriad other possible sources of supplemental funds, such as:

- Different government subdivisions (federal, state, local) may be asked to participate under cost-sharing arrangements. Although the central government is often expected to take the lead in emergencies, if certain regions have all the swine trade and have been enriched due to that trade, it may be reasonable to expect them to shoulder more of the responsibility. Local assemblies may have regular or emergency budgets which can be used for epizootics.
- General trust funds, or trust funds on particular issues, may be available. For example, if ASF is expected to disproportionately affect women farmers, a Women's Development Fund may be tapped for funds. If the disease is striking more than one country in a region, regional organizations may be contacted for financial support.
- Governmental and non-governmental agencies and organizations may have access to funding sources. For example, does the national disaster/civil protection organization have access to funds? Are there non-governmental organizations that have been particularly involved in animal husbandry or food security issues?
- The farmers themselves may be able to mobilize funds. Particularly in countries where swine husbandry is carried out by large commercial farmers, they may have the wherewithal to provide financial support. Of course in countries where the farmers are mostly at subsistence level, they would not earn enough extra cash to pay for participation in something like a mutual fund. Nonetheless, they may be able to come up with some aid, even if as a gesture to a government that risks crossing its arms in the belief that farmers "are doing nothing to help themselves."
- Although few insurance companies will consider insuring farmers in ASF-threatened countries in light of the extreme risk, government may be able to require – or facilitate through incentives – such assistance.

All the best emergency plans will amount to very little indeed if the financial means to implement the plans are not guaranteed to be available upon an outbreak of the disease. It is essential to lock in those funds – whatever their provenance – *before* the outbreak. Reactions must not be slowed or stalled while the veterinary department goes searching for funds or for political backing to release emergency funds. Not only does this waste time and allow the disease to proliferate, but it raises a tragic paradox: *the longer a government waits, out of fear of the expense, to attack the disease, the more expensive that eventual response will be.*

1.3 Legislative Framework

1.3.1 Assessment of Current Legislation

The implementation of many of the measures discussed in this document will require legislative backing. Some countries may already have the tools in place; other countries will have to expend more effort to ensure that a proper framework is established before there is an outbreak of ASF. In order for a government to determine which is the case, it should take on as its first task the assessment of existing legislation. The object of this assessment will be to determine whether, under existing law, all the implicated actors – farmers, veterinary officers, other governmental officials – are identified, and their powers and roles defined. If there are gaps or weaknesses in the existing legislation, these will have to be addressed. Only in this way can a government ensure an effective response to an animal disease emergency.

A comprehensive assessment of existing legislation relevant to an animal health emergency will ask the following questions:

- *is there animal health legislation in place?*

Is there an Animal Diseases Act? Animal Quarantine Act? Importation of Animals Control Ordinance?

- *does it provide for all the necessary powers and measures to combat an emergency?*

The details of these emergency powers and measures will be outlined in the next section, but the two most important are the immediate access to funds in an emergency and the ability to impose and enforce control measures.

- *is the animal health legislation up to date?*

The fact that legislation dates from the colonial era is not reason enough to amend or replace it, particularly where funds are limited and government priorities are elsewhere. Expert advice should be sought to discern whether the law's problems are more serious than simply having outdated terminology. For example, if a country is a member of the World Trade Organization, quarantine measures must have a scientific basis and be based on a risk assessment, or else they may violate the Agreement on Sanitary and Phytosanitary Measures.

- *is there legislation governing the veterinary profession?*

Is there a Veterinary Surgeons' Act? An Act creating a Veterinary Council?

- *what is its aim?*

Most often, legislation on veterinary surgeons is intended to regulate the veterinary profession by restricting the practice of veterinary medicine to qualified practitioners. However, such a law may unduly restrict the use of community veterinary health workers and/or private veterinarians in an emergency. Where there is an epizootic, all human resources must be mobilized, particularly where there are an insufficient number of veterinarians in the country, or where, as among some traditional groups, community health workers may be more readily accepted than veterinary officers. In such situations, village veterinary workers are useful as an adjunct to regular well-trained veterinary staff.

- *is there a disaster relief act?*

Is there an Act creating a national disaster organization (see Box 1)? An Act on the Territorial Administration? A Disaster Prevention Ordinance?

- *does it give legal force to an emergency plan for animal diseases?*

The emergency plan should not be simply a working document but should have a legal basis. Often, the same Act not only creates the national disaster organization but also empowers it to issue a binding emergency plan, the essential elements of which have been described above.

- *are there local ordinances that would come into play?*

Some measures, such as prohibitions on animals roaming (in heavily inhabited or agricultural areas) might be addressed in local ordinances. These, too, should be collected and categorized, as they may serve as useful models for other local areas or for directives to be issued from the central governmental authority in the case of an emergency. As noted, however, even where local authorities themselves are empowered to impose and enforce control measures, strong central oversight and direction in the case of an emergency should still be maintained. (See Box 2).

- *is there other legislation not precisely touching on animal health issues but which may be implicated in an animal disease outbreak?*

Beyond the main animal health act, there may be laws or regulations which should be taken into consideration in the survey of existing legislation. For example, are all farms required to be registered (and thus more detailed sanitary measures could be imposed in connection with registration, and controlled by inspections)? Is there a permit system for all imports including animal products? Is meat inspection a responsibility of the veterinary services department?

Box 2: Ghana and Decentralisation

In view of the decentralization programme in Ghana, most measures that will have to be taken in the face of an epizootic are likely to be taken at the level of the District Assemblies (as they are called in the Districts, or the Accra Metropolitan Assembly in Accra) rather than the national legislature (Parliament). To avoid inconsistencies among the by-laws issued by the various districts, and to encourage the less active District Assemblies to follow the lead of those that are more involved in planning for epizootic threats, it is recommended that draft by-laws be circulated among the District Chief Executives and discussed at their meetings. The NADMO and the Department of Veterinary Services should be involved in the preparation and circulation of the draft by-laws.

1.2.2 Necessary Elements of National Legislation

Once the existing legislation has been collected, the ensemble of all the legislative enactments should be examined and assessed. The following list of elements may be used as a guide for determining whether there are gaps in the existing framework and how they might be filled. Not all of the matters outlined here will be essential in all countries, since the contents of a particular country's laws and regulations will depend on the policy priorities and exigencies of that country at that particular time.

Nor can it be said which matters 'belong' in a basic law such as an Animal Diseases Act versus which should be contained in subsidiary legislative instruments like regulations and decrees. Although the general principle of national legislation obtains – i.e., that a parliamentary law is basic, whereas details should be contained in the regulations since they are more easily changed – the precise dividing line will depend on the situation in a particular country. Nonetheless, a robust legislative framework which will enable a rapid and effective response to an outbreak of ASF ought to contain, if possible, many of the elements described here.

- *list of quarantinable diseases*

Most frequently, this list is an annex or schedule to an Animal Diseases Act, since diseases may have to be added and deleted from the list fairly regularly. It goes without saying that African Swine Fever must appear somewhere in this list.

- *reporting requirements*

There must be a duty imposed on both government officials (veterinary officers, extension agents, border guards) and private citizens (farmers, private veterinarians) to report the appearance of certain diseases, even before the existence of the disease can be diagnostically confirmed.

- *powers of delegation*

The Minister must be able to delegate necessary powers to the Director of Veterinary Services. In the context of an emergency when there may not be sufficient staff

strength for all the required tasks, the Director of Veterinary Services must also be able to impress into service other Ministry staff as well as private veterinarians.

Box 3: Private Veterinarians in Côte d'Ivoire

In Côte d'Ivoire, legislation authorizes the Minister of Agriculture and Animal Resources to appoint private veterinarians as agents of the government ("*mandat sanitaire*"). In view of the fact that a number of veterinarians have left public service, this useful provision enables the government to rely on these private veterinarians to fill in the gaps where the need is particularly great. For example, private veterinarians may be called upon to carry out vaccination campaigns, to visit farms to assess the spread of certain animal diseases, and to sensitize farmers to certain necessary sanitary measures.

- *power to declare emergency/access to funds*

The Minister or his/her delegate must have the power to declare an animal disease emergency, which thereby triggers the release of funds to combat that emergency. There must be sufficient funds set aside and *immediately* available upon the declaration of ASF anywhere in the country.

- *power to impose (and lift) quarantine*

The Minister must have the power to declare certain areas under quarantine, with concomitant restrictions. For example, certain locales or herds may be designated as affected, and therefore the movement of persons, animals, and objects may be limited or prohibited. The measures may require that all animals be housed or tethered; and that trade in eggs, hide, milk, semen, meat, and meat products be strictly controlled (including a prohibition on artificial insemination). As noted above, under the Agreement on Sanitary and Phytosanitary Measures, all of these quarantine restrictions must have a scientific foundation and be based on risk assessment. There should be a procedure for review of areas under quarantine and the lifting of quarantine where the danger has abated.

- *assistance from forces of public order*

The Minister must be able to request the assistance and presence of the forces of public order in carrying out control measures such as those associated with the imposition of quarantine, inspection, slaughter, road blocks, and the like. At the height of an epizootic, animals and objects may need to be seized at borders and in quarantine areas; and persons may need to be detained for non-co-operation or other offences. The customs service, the police, and the armed forces are likely candidates to collaborate with the veterinary officers and other ministry officials. If there are any financial implications associated with this co-operation, they must be addressed before the emergency.

- *inspection*

As there are essential inspection functions relating to animal health and veterinary matters, there should be an inspection service within the veterinary services department, or at the least, veterinary officers should carry out an inspection function (including taking samples) in addition to their other tasks. These inspections should cover some or all of the following locations and tasks: farms; borders and airports; slaughterhouses and markets; animals; products of animal origin; animal feeds; veterinary medicines; and animal genetic resources.

In some countries, for historical reasons or because there were problems of understaffing in the veterinary department, the task of meat inspection was assigned to the Ministry of Health. This can raise problems, as health inspectors are generally not as fully trained in recognizing potential dangers. For this reason, and to ensure consistency and effectiveness in inspections of animals and animal products, it is our view that the oversight of slaughterhouses and the like should be within the purview of the veterinary department.

- *collect epidemiological data*

Some person or department should be charged with collecting and analyzing epidemiological data so that the disease status of the country – and its various regions – can be monitored. This information should be shared on a regional and international basis.

- *animal and farm registration/identification scheme*

It is not upon the appearance of ASF that government officials should begin trying to determine who the swine farmers are, where their farms are located, and how many animals they have. A system of control should be instituted well beforehand, perhaps including a farm registration programme, a system of bar-coded ear tags or branding to identify each animal in the country, and a census of livestock in each region. These measures offer benefits even where there has not yet been an outbreak of an animal disease. For example, where farms are registered and subject to regular inspections, farmers can be sensitized to proper zoosanitary procedures and to dangers such as feeding their livestock with swill of animal origin.

Box 4: Farm Registration Programme

Under a farm registration programme, every livestock owner intending to raise swine would be required to register his or her farm, with each site being assigned a separate registration number. Only farms meeting the requirements set out in the legislation would be registered, and existing farms would have to be relocated or modified to meet the requirements within a specified time period, or cease operation. To register a farm, a livestock owner would submit an application and non-refundable fee to the designated authority, and the farm site would be inspected before approval. Periodic inspections would guarantee that sanitary measures are followed, and the inspection fees would cover the running of the programme. Upon approval, the owner would be permitted to display a certificate stating that the farm is registered according to legislation in force.

- *import controls*

The government should exercise control over the import of live animals and all kinds of animal products. The system should take account of testing, treatment, and health certification in the country of origin, and should require import permits. In a country where there is an outbreak of ASF, there may be post-import quarantine of animals and animal products, or more likely, imports may be banned altogether.

- *slaughter*

Once there is an outbreak of ASF, the Minister or Director of Veterinary Services must have the power to order the destruction of dead and dying animals, as slaughter is the most important weapon in the fight against ASF. This may be difficult to accept, as the usual conception of a tool for combating an animal disease would be something like a vaccine or a quarantine measure. But since there is no treatment or vaccine for ASF, the only way to arrest the spread of the disease is to remove the affected animals so that they cannot spread the disease to healthy ones.

Although the power to destroy will be contained in the legislation, the details – such as who is authorized to destroy the animals, how the animals should be slaughtered (and in what order), how the carcasses should be disposed of, whether and what kind of disinfection should be carried out, and when and how restocking may take place – should be contained in standing orders or in decrees/regulations/orders to be issued rapidly as needed. These orders should also indicate whether the government intends to provide equipment for slaughter, disposal, and disinfection.

- *compensation*

Compensating farmers whose animals have died and/or whose animals are slaughtered is absolutely essential to arresting the spread of the disease. This compensation must be announced simultaneously with the announcement of the slaughter, so that farmers are not tempted to quickly sell or hide their animals once they learn of the plans for slaughter. The brief period after the announcement of the slaughter, when the

seriousness of the outbreak is not yet understood and when there are furtive movements of animals, is when the disease can spread the fastest.

The level of the compensation should be set ahead of time, preferably in the emergency plan. The amount should be high enough that it makes real inroads into the farmers' losses, though not so high that it depletes government coffers and prevents policymakers from taking other necessary action. In addition, the form of the compensation should be decided upon, i.e., in cash or in kind. The main argument for awarding the compensation as cash is that it is difficult for the government to purchase and provide the replacement livestock. The counter-arguments are that with cash awards there is more possibility for fraud; and that farmers may leave swine husbandry altogether.

Irregularities that may arise in the implementation of the compensation programme, such as farmer fraud and official corruption, do not obviate the need for compensation but rather argue for effecting it carefully while taking account of such potential problems. The government should determine its strategy ahead of time so that the slaughter and compensation programme is not delayed at the moment when firm and decisive action is needed.

- *offences and penalties*

Somewhere in the legislation – usually in the basic Animal Diseases Act – offences against the law will have to be defined, and their associated penalties listed. The offences can be divided into two categories: those that can be committed by the public, and those that can be done by officials carrying out their official duties under the law. In the former group should be addressed some or all of the following prohibitions: digging up buried animals; disobeying orders given by a person in authority; violating movement restrictions or other quarantine measures; slaughtering except as and where instructed; and stating falsehoods or misrepresentations to gain financial reward (e.g., compensation). The second category includes prohibitions against improperly gaining financial reward while exercising official duties (bribery, corruption); revealing secrets acquired during the course of work under the law; and otherwise abusing one's office or position.

The level at which the penalties will be set depends on the particular country and situation, but the basic rule is that the penalties should be high enough to be a deterrent while at the same time low enough to be taken seriously as real and not imaginary measures. Naturally, a second or subsequent offence should be punished more harshly. The penalties can consist of fines, forfeiture of livestock and property, and, as a last resort, imprisonment. One or two highly publicized prosecutions may serve a useful public education function in the early stages of the emergency, and thereby encourage other citizens not to avoid their duties.

A final task involves deciding who will be responsible for enforcing the law, discovering violations, and bringing citizens up on charges. Only those persons setting the penalties in a particular country can know whether there is a danger that the officers charged with enforcement may use the threat of a penalty to extort improper payments from farmers and the public. If this is

a real possibility, all efforts should be made to design a system that allows for the least possible likelihood of this behaviour to occur. It may be wise in any case to include a transparent appeal process, so long as in an emergency situation such a process does not undercut the benefit of the otherwise unfettered exercise of power the authorities must enjoy in order to carry out effective action.

* * *

Among all the legislative topics just explored, many will belong in the basic Animal Diseases Act; others in the associated regulations and orders; and others still in free-standing decrees ready to be issued (by a Minister, Prime Minister, or President) upon the appearance of ASF. This last avenue is critical because even the few days necessary to issue regulations may be too long to wait where there is a real emergency. Another way to save time in the case of an epizootic is to prepare draft regulations and decrees ahead of time, for inclusion as appendices to the national disaster management plan. This will ensure that upon an outbreak, valuable time is not lost preparing this documentation.

1.4 Awareness

Long before the disease appears, farmers, veterinary officers, border guards, and other government officials should be made aware of the potential for the disease to appear in the territory. The minimum contents of any information programme would be the importance and danger of the disease; its clinical signs; the necessity for prompt reporting (and to whom); and the scope of expected government support once there is an outbreak. The training and informational activities may be carried out through the extension services, the veterinary department, schools, the media, the disaster organization, and veterinary clinics.

PART II – ACTIONS TO BE TAKEN AFTER OUTBREAK

2.1 Implement Control Measures

Business cannot go on as usual when there is an outbreak of African Swine Fever. Someone (usually the Minister of Agriculture, but it may be the Prime Minister, the President, or the Director of Veterinary Services) will have to put into effect control measures to check the spread of the disease. The measures, which have been outlined above, may include declaring quarantine in certain locales; restricting the movement of animals and animal products; closing markets and slaughterhouses; barring imports; and ordering destruction of animals while at the same time authorizing compensation.

If the government planners have done their preliminary work properly, then upon the outbreak it will not be necessary to get bogged down in questions about which measures are the appropriate ones for the particular country (or region) or which strategies will be most effective in the particular context. Instead, the emergency plan should contain all the details even down to the order in which the various measures should be imposed.

2.2 Enact/Issue Legislation

Most of the control measures will be contained in regulations, orders, or decrees to be issued upon appearance of the disease. As suggested above, there is no reason to wait until the outbreak to draft the legislation. Rather, to ensure the most rapid implementation possible, draft orders, decrees, or by-laws should have been attached as annexes to the emergency plan, with blank spaces for any details that could not be decided ahead of time. Once the disease appears, it is up to the government simply to decide how and by whom the measures will be put into place: as ministerial orders under an existing law, prime ministerial orders, inter-ministerial orders, presidential decrees, local by-laws (with centralized guidance), or by some other avenue.

Box 5: Cameroon -- Ministerial Order during an Outbreak

During the outbreak of ASF in Cameroon in 1982, the Ministry of Animal Husbandry, Fisheries, and Animal Industries issued a ministerial order containing the following provisions: Article 1: declaring certain zones infected with ASF; Article 2: prohibiting the movement of animals and animal products within, to, and from these zones; Article 3: ordering the slaughter of all swine affected or suspected of being affected; Article 4: requiring the inspection of stored frozen carcasses and their destruction if ASF lesions are present; Article 5: requiring that locales, material, and vehicles declared infected be cleaned and disinfected and only restocked after three months of inactivity; Article 6: ordering the destruction of animal feeds intended for swine in the infected areas, and suspending the production of animal feeds for three months; Article 7: directing that cleaning and disinfection of locales and means of transport be carried out under the supervision of and with the materials prescribed by the proper authorities; Article 8: imposing a duty on farmers in the infected zones to follow all instructions issued by the authorities; Article 9: charging governors and provincial delegates of the Ministry with the strict enforcement of the order.

2.3 Carry Out Public Awareness Campaign

It is important to acknowledge that failures to control outbreaks are usually not due to lack of information but rather to the failure to mount an effective containment and elimination campaign or to the absence of strong central guidance. Nonetheless, to ensure co-operation and the best possible outcome, it is essential that the public be sensitized to the dangers of the disease and the actions they can and cannot take to combat it. Large farmers may at first believe they are immune if they employ rigorous hygiene measures as a matter of course. Smaller farmers may believe that it is the larger farmers who are more at risk because of their many contacts with other farms, or for other reasons. But when the disease starts taking its course, all farmers, large and small, rural and urban, will soon realize that no one is immune and that the only solution is to strictly follow the sanitary measures outlined by the veterinary officials. This realization can be speeded by an effective information campaign.

A public awareness campaign may be carried out by the disaster organization, by the Ministry of Information, by the press (television, radio, newspapers), by other means (pamphlets,

posters), by farmers' co-operatives and groups, and by the extension department of the Ministry of Agriculture. The campaign should inform the public of their rights and duties, of the quarantine and sanitary measures imposed, of the slaughter programme and the details of the compensation programme, and of course, of all laws, regulations, and decrees enacted and under review. Other target audiences toward whom educational activities should be directed are extension workers, border officers, and local, district, and regional authorities.

2.4 Mobilize All Elements

Once ASF has appeared in the territory, it is critical for the co-ordinating body – whether that is the emergency committee, the national disaster organization, or the ASF task force – to involve all persons, agencies, and groups in the implementation of the emergency plan. Among the groups who should be consulted are the customs service, forces of public order, the armed forces, border guards, ministries (of health, local government, territorial administration, finance), producers' associations, and farmers' co-operatives. It is particularly important that farmers not be made to feel that measures are being imposed on them from somewhere up in the hierarchy. Hopefully, if they have been involved from the outset in the preparation of the plan, this kind of alienation can be avoided, and the provisions of the emergency plan can be implemented with a minimum of discussion and delay. In this way, the effectiveness of a country's response to an outbreak of African Swine Fever can best be maximized.