



# Challenges and solutions for community engagement in African swine fever outbreak management in smallholder pig systems in Africa

Michel Dione (ILRI)

ASF SGE meeting no. 4

15 - 17 October 2024, Online



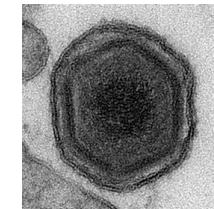
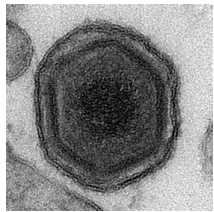
# Characteristics of pig production smallholder pig systems

A large informal sector

- Mostly backyard systems, managed by women and children (confined, tethered or free-range)
- Low productivity (breeds, feeds & health constraints)
- Uncoordinated trade & transport
- Predominantly unsupervised slaughter slabs, with no meat inspection in local markets, roadside butchers, pork joints
- Few medium and large-scale piggeries
- Few or no formal processing



# African Swine Fever Virus (ASFV) cycles in Africa



Warthog-tick cycle, **Eastern and Southern Africa** (genotypes I–XXII, XXIV)

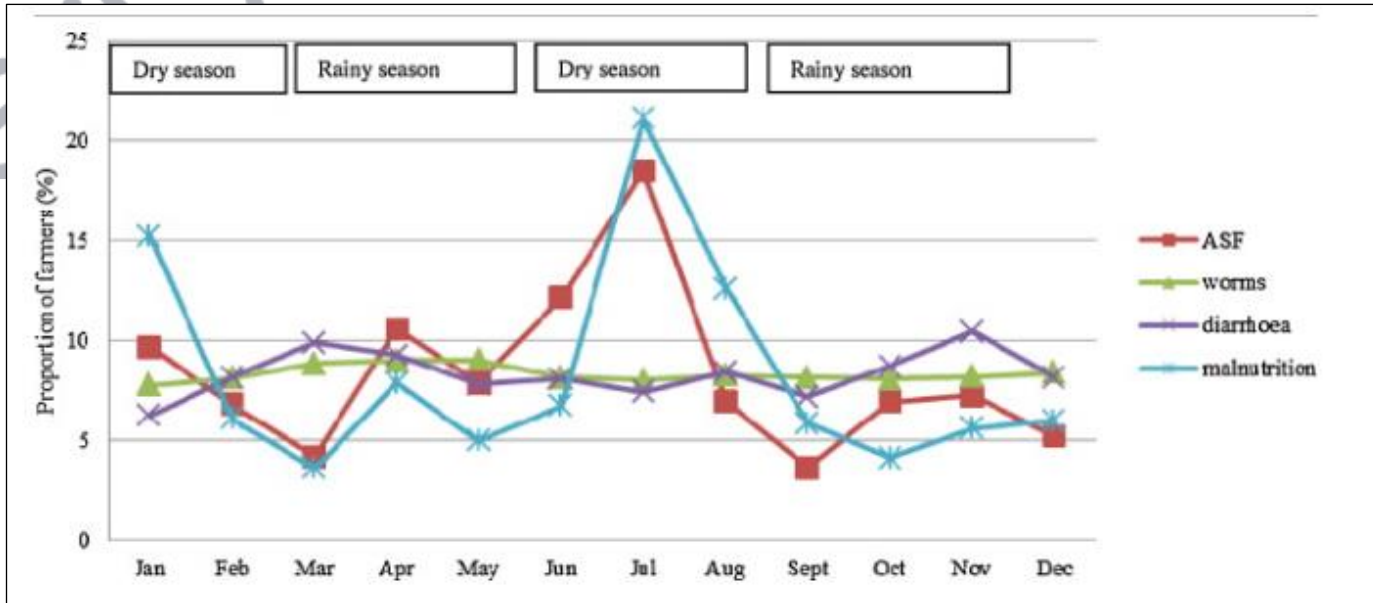
Domestic pig cycle (genotypes I–X, XII, XIV–XXIV in the area with the classic sylvatic cycle; genotypes I or II elsewhere) – **West Africa, East and Southern Africa**

Domestic pig-tick cycle, **Eastern and Southern Africa** (genotypes VIII, XXIV)

**ASFV is mainly maintained through the domestic cycle which involve pig to human interaction**



# Understanding local dynamics and risk factors of ASFV spread along the pig value chain



Participatory epidemiological assessments with pig farmers



# Understanding local dynamics and risk factors of ASFV spread along the pig value chain

**Table 3**  
Ranking of the perceptions of value chains actors regarding the risk of ASF between value chain nodes.

Value chain nodes	Key informants	Veterinary service supplier	Drug stockist	Feed stockist	Farmers <sup>a</sup>	Boar keeper <sup>a</sup>	Live pig trader	Butcher	Mean	Rank
Input supply and services	2.7	4.5	6.5	7.5	4.0	5.0	4.0	1.5	4.46	5
Pig production	2.7	5.5	5.5	7.5	4.7	3.8	2.5	3.0	4.40	6
Collectors/Bulking	3.0	5.5	4.5	7.0	5.3	6.0	9.0	6.5	5.85	3
Transportation	5.0	8.5	7.5	9.0	7.7	7.5	7.0	7.0	7.40	1
Slaughter <sup>b</sup>	5.3	6.5	6.0	6.0	7.0	7.5	4.0	6.5	6.10	2
Processing <sup>c</sup>	1.7	4.0	3.5	2.5	3.0	1.3	2.5	2.0	2.56	9
Wholesale (supermarket)	2.7	1.5	5.5	5.0	3.0	3.5	6.5	5.0	4.09	8
Retail (butchery)	2.7	4.5	4.5	3.5	5.3	5.5	2.5	7.5	4.50	4
Consumption	3.7	4.5	1.5	1.5	5.0	5.0	7.0	6.0	4.28	7

Participatory value chain analysis of the risk of ASF spread along the value chain

Dione et al. 2016


**Table 4**  
Ranking of the perceptions of value chains actors regarding the risk of ASF within value chain nodes.

Value chain nodes	Value chain actors	Mean score	Rank
Input supply and services	Boar service	7.8	1
	Vets and village vets	6.9	2
	Breeders	5.6	3
	Feed suppliers	4.5	4
	Veterinary service providers (including drugs)	3.5	5
	Private, government and para-vets	2.5	6
Production	Piglet producers	1.7	2
	Growers	1.9	1
Collection/Bulking	Traders (live pigs)	1.6	2
	Brokers	2.0	1
Transportation	Traders (live pigs)	1.4	2
	Transporters	2.2	1
Slaughter	Backyard slaughters	2.9	2
	Authorized Slaughter slabs	2.9	1
	Wambizzi abattoir <sup>a</sup>	1.5	3
Processing	Backyard butchery	2.4	1
	Processors, e.g. Fresh Cuts, Farmers' Choice <sup>b</sup>	1.5	2
Wholesale	Backyard butchery	2.2	1
	Pork joints <sup>c</sup>	1.5	2
Retailing	Butchers/pork joint	2.2	1
	Supermarkets	1.4	2
Consumption	Individual households	3.0	1
	Pork joints	2.6	2
	Restaurants	1.9	3

<sup>a</sup> Wambizzi Cooperative Society is the only pig abattoir in Uganda, located in Kampala.

<sup>b</sup> Fresh Cuts and Farmers' Choice are the best known pork processors in Uganda.

<sup>c</sup> Pork joints are public places where pork is cooked or roasted and sold for consumption.



## Understanding the incentive for value chain actors behavioural change

Protection of business/source of income and the lack of knowledge about ASF and its control measures are the key reasons of lack of disease reporting and compliance to animal movements according to pig value chain actors (farmers, traders and veterinarians).

Dione et al., 2018



# Co-creation of contextualized cost-effective solutions with actors and stakeholders

**Table 6**  
Recommendations by value chain actors for better control of ASF and their perception of its applicability.

Domain	Recommendation	Disease control	Ease of implementation	Cost-Effective	Timeline
Biosecurity	Farmers to construct fences around their farms	High	Medium	Low	Medium
	Use of disinfectant footbaths on farm	High	High	High	Short
	Restrict visitors on farm	High	Low <sup>a</sup>	Medium	Short
	Boiling of swill before feeding to pigs	High	Low <sup>b</sup>	Medium	Short
	Regular disinfection and cleaning of pig pens and farm structures	High	Low <sup>c</sup>	High	Short
	Have separate feeds formulation unit for mixing ingredients	Medium	High	High	Short
	Avoid recycling of feed bags	High	High	High	Short
	Observe quarantine during disease outbreak	High	Low	Low	Short
	Install police check points to control animal movement	High	Low	Low	Long
	Arrange training on bio-security measures	High	Medium	High	Short
Awareness	Launch a campaign against ASF (seminars, radio talk shows, posters)	High	Medium	Low	Short
	Put signposts with guidelines for visitors (farmers, veterinarians and traders) at gates of farms	High	High	High	Short
	Create parish information centres	High	Medium	High	Short
Communal breeding	Each farm should have its own boar	High	Low <sup>d</sup>	Low	Short
	Promote artificial insemination	High	Medium	Low	Medium
	Stop village boar service, especially during ASF outbreak	High	Medium	Low	Short
Collective action	Strengthen the existing farmer and trader associations for collective marketing	High	Medium <sup>e</sup>	Medium	Short
	Establishment of centralized slaughter places at parish level and abattoirs at district level	High	Low	Medium	Medium
Disease surveillance	Establishment of village biosecurity teams.	High	High	High	Short
	Develop rapid diagnostic kits for ASF	High	Medium	Low	Medium
	Put in place and enforce pig by-laws (e.g ban sell of meat from dead animals; control illegal movement; guidelines for buyers and vets)	High	Low	High	Short
	Campaign to control stray dogs	High	High	High	medium
	Regulation of enforcement on input service providers (drugs and feeds)	High	Low	Medium	Short

a This could be low considering beliefs and social norms.

b It has an associated cost of fuel and labour.

c The cost may limit its implementation.

d The majority of farmers have fewer than three pigs, so they would not invest in having their own boar because of lack of high cost of maintenance.

e There is lack of trust among group



## Key principle and recommendations to better engage communities

- ▶ After outbreak is confirmed
  - ▶ Engage the local government before applying movement restriction and bans of sale of live animals
  - ▶ Identify the households that are affected by the outbreak
  - ▶ Support target households/farms to take actions on biosecurity measures (restrict spread to other farms)
  - ▶ Through farm cooperatives/groups if exist, support capacity building and awareness raising; If no farmer cooperative/group – work with village/community leaders
  - ▶ Take a community approach to stop trade and movement of traders and animals (communities need to understand the benefits)
  - ▶ Identify the source of incentive for control? (market-based system, compensation, individual motivation, etc...)
  - ▶ Support other source of livelihood of communities
  - ▶ Work together and learn from each other
  - ▶ Start with ‘low hanging fruits’



# Some community engagement action; participatory capacity building of farmers



Community meetings

Farmer field schools







# Some community engagement actions: Awareness raining

## You can help stop African Swine Fever killing your pigs

Osobola okuyamba okuziyiza omusujja ogutta embizzi zo  
Ebekin jo akingarakin akitogwo adeka nakimajala narenene ingurei

**Inyalo chego musujja neko mbijje perini**

**Onyala waba nobuhonyi bwakamya omusujja kwe mbichi ohwita embichi chayo**

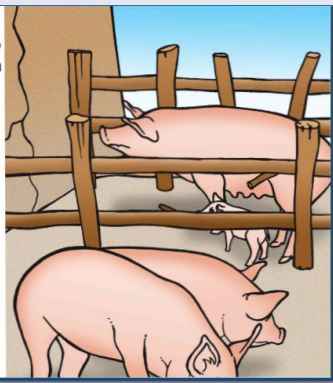

<p><b>Confine your pigs</b> Embizzi zikuumire mu kiyumba Kigalik ingurei kon Geng mbijje woth Yikarira embichi chawo</p> <p><b>a. No free range</b> Tozireka kutayaaya. Mam akinyekite kiladete kichar Ikiri iyeyi jo wotho kichar Otaleta embichii chaluakula</p> <p><b>b. Control other pigs and people from having contact with your pigs</b> Ziyiza embizzi endala na'bantu okujja mu mbizzi zo Kirebok ingurei lukokinga kiton itunga komam kwapete kalukon kingurei Ikiri iyeyi mbijje gi ji mawoko riwirok gi mbijje perin Kayira Embichi cherwany alala nende abandu obutabukanana nende embichi chawo</p>		<p><b>Feeding</b> Okulilisa embizzi Akitano Miyo mbijje chiamo Ohulisa embichi</p> <p><b>Before feeding your pigs, boil the swill for 20 minutes with 1% Magadi Soda</b> Ngatonalilisa mbizzi zo emmere enfumbe gyo'kunganyizza ewalala, soka oddemu okujifumbako okumala eddakika abiri(20) ngo'tademu ekisura(magadi soda) Ernga jo kilana inyamen hwechakanaro ingurei kon kotukutoo bere idakikan akalishare tomaken ejej abalang adiosit nilesikina Kafuodi iki miyo mbijje chiamo, twaki chiamo pajo madakika pieri aryo gi kado thudho Notalisa embichi chawo ebyahulya bidehe, byoba nohunganise, tangira mberi obidehe hulwedadika amahumi kabiri (20) nga ohoesesa amachi kalimu amagadi.</p> 
--	---	--

## You can help stop African Swine Fever killing your pigs

Osobola okuyamba okuziyiza omusujja ogutta embizzi zo  
Ebekin jo akingarakin akitogwo adeka nakimajala narenene ingurei

**Inyalo chego musujja neko mbijje perini**

**Onyala waba nobuhonyi bwakamya omusujja kwe mbichi ohwita embichi chayo**


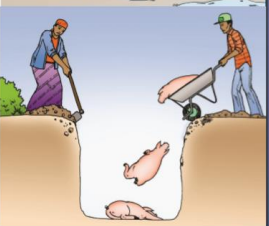

<p><b>Bringing new pigs onto your farm</b> Okuleeta embizzi endala mu kiyumba kyo Ayaon ingurei iche lukitetiak atamaujo kon Kelo mbijje manyien kami ikuro iye mbijje perin Ohuleta embichi ngeni mudala iyawo</p> <p><b>Isolate new pigs for 15 days when you bring them onto your farm (no contact with any other pigs)</b> Yawula embizzi zewakaleeta okumala annaku kkumi natano ngo'zireese kufamu oba mukiyumba okwewala okwetabika mu mbizzi endala Kogelu ingurei lukitetiak kaparasha katomoru kakany kapaki ni yaunayo jo atamaujo kon (mam kidunyakinosi kingurei kiche) Geng mbijje mawendo riwirok gi machon ndelo apari gi abich Nokula embichi ngeni otachihubania nende echawo hulwembaka rye ndalo ehumi nende chibiri. (Chitabukanana haba)</p>		<p><b>Reporting</b> Okutegeeza abasawo kubulwadde bwe'mbizzi Akitodiyar Nyutho ofisi matero ogwange two ma mbijje. Ohwekesa abobunyala be bisolo ebidirana nende omusujja kwe mbichi</p> <p><b>Report rumours about sick or dead pigs to the vet office</b> Tegeeza omusawo we'bisoro mu kitundu kyo ku kufa oba ku kulwala kwe'mbizzi Kitodiya alimlimi ikamutosi ingurei lwedekasi kiton luketwakata efisi loka ibaren[vet] Wachi ri doctor matero ogwange two gi tho ma mbijje Yekesa omusawo webisolo ebidirana nende ohufa hwembichi</p> 
--	---	---

## You can help stop African Swine Fever killing your pigs

Osobola okuyamba okuziyiza omusujja ogutta embizzi zo  
Ebekin jo akingarakin akitogwo adeka nakimajala narenene ingurei

**Inyalo chego musujja neko mbijje perini**

**Onyala waba nobuhonyi bwakamya omusujja kwe mbichi ohwita embichi chayo**

<p><b>Cleaning</b> Okulongoosa Alaus Lwoko Ohwosa</p> <p><b>Use disinfectant for cleaning pig houses and after slaughter</b> Kozesa eddagala eritta obuwuka ngo'longoosa ekiyumba kyembizzi, era ngomazze no'kubaaga Kitosoma ekeya lari igasia kijokis akilosia etogo kingurei kiton kedaun akiar Ori yath ilwoko oti mbijje gi ki ichowo neko Hoesesa amalesi keta esibuha, niwosa enyumba che mbichi, nende buli lwo mala ohusinja embichi</p> <p><b>Dispose of dead pigs</b> Okusuula embizzi ezifudde Epone lingadanakiner ingurei luketwakata Boli woko mbijje mutho Embichi chifire chisukune mungeri endayi</p> <p><b>Bury all parts of the carcass and the skin 6 feet deep</b> Ziika ebitundu byembizzi ezifudde na'maliba mukinyya kya futu mukaaga (6 feet) okukka wansi Konukak iwaitinkjokis adwi kwap efutin ikankape Yiki mbijje mutho futi awuchiel ilowo Siha ebitundu byosi ebye mbichi yifuti efuti chisasaba muoba</p>	 	<p><b>Moving pigs between districts</b> Okutambuza embizzi Ayaanar ingurei Alomar kodistirik kepe akitodol namka loche Wotho gi mbijje Yekesa omusawo webisolo ahuli awambi, nokesa embichi mu disturikti yawo, oba no chiyira mudistirikti</p> <p><b>Contact the vet office when moving pigs in or out of the district</b> Kolagana no'musawo we'bisoro akulyo'kumpi ngo'tambuza embizzi mu kitundu kyo oba wabweru we'kitundu kyo</p> 
---	--	--



## Some community engagement actions; community-based model farms



Before renovation



After renovation

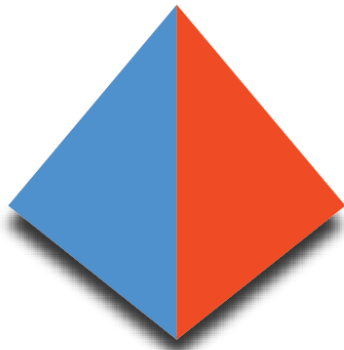


# Some community engagement action; participatory capacity building traders/butchchers





Different constraints from different actors, with different objectives and contexts, so need for different solutions.



# GF-TADs

GLOBAL FRAMEWORK FOR THE  
PROGRESSIVE CONTROL OF  
TRANSBOUNDARY ANIMAL DISEASES

*Africa*



Food and Agriculture  
Organization of the  
United Nations



World Organisation  
for Animal Health  
Founded as OIE



ILRI  
INTERNATIONAL  
LIVESTOCK RESEARCH  
INSTITUTE

