



**ZIMBABWE INSTITUTE OF CERTIFIED CUSTOMS &
EXCISE EXPERTS**
T/A
AFRICA CENTRE FOR CUSTOMS, EXCISE AND TRADE STUDIES (ACCETS)

DRONES AS A TRADE FACILITATION TOOL



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August, 2020

Table of Contents

1. Introduction.....	3
2. Trade Facilitation.....	3
3. Use of Drones	4
4. Misuse of Drones for Smuggling.....	6
5. Challenges with Use of Drones by Customs	6
6. Examples of Drone Images.....	7
7. Benefits of Using Drones as a Trade Facilitation Tool	8
8. Recommendations to Customs Administrations	9
9. Conclusion	10
8. References	12

Abbreviations

1. ZIMRA	Zimbabwe Revenue Authority
2. SADC	Southern Africa Development Community
3. COMESA	Common Market for Easter and Southern Africa
4. AfCFTA	Africa Continental Free Trade Area
5. TFTA	Tripartite Free Trade Area
6. ASYCUDA	Automated System for Customs Data
7. WCO	World Customs Organisation
8. WTO	World Trade Organisation
9. GATT	General Agreement on Tariffs and Trade
10. CCTV	Closed-Circuit Television
11. TFA	Trade Facilitation Agreement
12. UAV	Unmanned Aerial Vehicle (Drone)
13. ISO	International Organisation for Standardization
14. CNN	Cable News Network
15. US	United States of America
16. SAPS	South African Police Service
17. TIP	Temporary Import Permit
18. CBP	Customs and Border Protection
19. SAFE	Framework of Standards to Secure and Facilitate Trade
20. UNCTAD	United Nations Conference on Trade and Development

Introduction

Customs administrations worldwide have implemented a number of trade facilitation initiatives and embraced a number of tools to ensure smooth flow and cost effective cross border trade. Some of the initiatives include automation of cargo clearance through use of systems like the UNCTAD Automated System for Customs Data (ASYCUDA) system used by administrations including the Zimbabwe Revenue Authority (ZIMRA) and the Simba System used by Kenya Revenue Authority. Others have introduced the use of non-intrusive equipment such as scanners and the canine unit; e-cargo tracking by use of e-seals and satellite tracking, use of CCTVs in Customs areas and according Authorised Economic Operator (AEO) status to some traders.

Customs or border control is tasked with facilitation of legitimate trade. However, a lot of illegitimate trade is going on especially in the border areas with smugglers resorting to use of unauthorised entry points from neighbouring countries.

In Zimbabwe, for example, the major border posts with this challenge are mainly Beitbridge along the Limpopo River (bordering South Africa), Chirundu along the Zambezi River (bordering Zambia), and also Nyamapanda and Forbes Border Posts (bordering Mozambique) which have anti-personnel landmines planted during the Zimbabwe War of Liberation. This smuggling unfairly competes with legitimate trade within the country. The government loses revenue and the local market is flooded with cheap goods at the expense of the legitimate traders.

Customs has tried border patrols where possible but because many security agencies are involved, information during coordination ends up being leaked to perpetrators thereby yielding not much positive results. For areas with landmines, patrols are impossible. Where patrols are possible, at times Customs find themselves without appropriate vehicles for the terrain along borders and at times the security agencies may not be available to accompany them.

The challenge remains on how to deal with effective and efficient border management especially border patrols.

This paper aims to introduce the use of drones by Customs Administrations to deal with the various border management challenges. Besides highlighting the benefits and challenges of using drones, the paper also discusses how the drones themselves have been misused for smuggling as well as recommendations to Customs Administrations to instead adopt the use of drones as a trade facilitation tool.

Trade Facilitation

A number of countries are members of the World Trade Organisation (WTO) and have to abide by requirements of Articles V, VIII and X of the GATT 1994. These Articles deal with Trade Facilitation.

Many countries further ratified the WTO Trade Facilitation Agreement (TFA), which resulted from the 9th Ministerial Conference of the WTO in Bali, Indonesia on 3 to 7 December 2013. It is aimed at lowering global trade barriers and is the first agreement reached through the WTO that is approved by all its members. The TFA is part of the few positive outcomes of the Doha Development Round, an ongoing WTO negotiation process that started in 2001.

Countries that ratified the TFA obligated themselves to complying with its provisions. The TFA aims to facilitate speedy movement, clearance and release of goods at the border posts and other ports of entry, including facilitation of goods in transit. The TFA is there to promote effective and efficient cooperation among customs and other relevant agencies on trade facilitation and other customs compliance issues. Articles 1 to 12 of the TFA cover publication and availability of information, disciplines on fees and charges imposed on or in connection with importation and exportation, other measures to enhance impartiality, non-discrimination and transparency, release and clearance of goods, border agency cooperation, movement of goods under customs control intended for import, formalities connected with importation and exportation and transit, freedom of transit, and customs cooperation.

The World Customs Organization (WCO) implemented the SAFE Framework of Standards to enhance the security of the international supply chain and promote trade facilitation.

All these WTO and WCO instruments are there to further expedite the movement, clearance and release of goods as well as to enhance effective cooperation among customs authorities and between customs and other border agencies on trade facilitation.

Use of Drones

A drone is an unpiloted aircraft and sometimes described as an "Unmanned Aerial Vehicle" (UAV). These crafts can carry out an impressive range of tasks, including military operations, package delivery including of groceries or any online shopping to homes or other destination, photography, emergency air rescue, outer space activities and recently border management. Drones can be as large as an aircraft which can carry people like for air rescue or as small as the palm of a hand used as toys for fun, leisure or recreation.



Source: *Drones Being Implemented in a Variety of Industries to Carry Out Dangerous Tasks Or Make Monotonous Tasks More Efficient* (<https://builtin.com/drones-robotics/drones-help-researchers-manage-koala-populations> 13 April 2020)

Drones were originally developed for the military and aerospace industries but have now found their way into the mainstream because of the enhanced levels of safety and efficiency they bring. These robotic UAVs operate without a pilot on board and with different levels of autonomy. A drone's autonomy level can range from remotely piloted (a human controls its movements) to advanced autonomy, which means that it relies on a system of sensors and Light Detecting and Ranging (LIDAR) detectors to control and calculate a drone's movement.

Because drones can be controlled remotely and can be flown at varying distances and heights, they make perfect candidates to take on some of the border management requirements. They can be very useful remote Customs Officers to give an eye-in-the-sky at a border post.

Governments' use of drones along borders has been described as a manifestation of border militarization, which involves the transference of military values and hardware into domestic life, particularly law enforcement (Wilson 2015; Milivojevic 2015; Jumbert 2016). I take this as a welcome development as use of drones also assists in dealing with the country's border security aspects due to sharing of resources. Drones' surveillance capacities aggravate the problem of border militarization where Gregory (2011) argues that the mediated vision drones provide privileges a "hunter-killer" perspective that makes it easier to launch attacks against people on the ground. Wall and Monahan (2011) support this with their contention that drones introduce "actuarial surveillance" that is premised on detecting enemies and calculating risks,

but while lacking the kind of contextual knowledge that is essential for knowing who is being targeted or feeling responsibility for the effects of violence. Similarly, Jumbert (2016) argues that drones are incapable of doing the delicate work of sorting through migrants who have a right to enter a country from those who do not because their position high above the ground divorces them from contextual information and forecloses the possibility of engaging with migrants directly. However, this argument overstates the problem, since Customs Officers would still be present to screen entrants at authorised ports of entry and drones would be restricted to patrolling routes the border boundary and illegal crossing point that are exclusively used by smugglers.

Use of drones sometimes breach privacy rights but these could be excused on utilitarian grounds for example border patrols may eventually protect more people than those who suffer infringements on their privacy rights. One might also argue that privacy rights do not exist along borders. This defence of surveillance could have some credibility for the narrow tracts of land on the no-man's-land along the border, but would not excuse surveillance of adjacent areas that will also be observed or to areas that are subject to surveillance by agencies that share the drones with Customs.

4. Misuse of Drones for Smuggling

The WCO, in their report, "Trade Facilitation: Promoting Inclusive Trade through Innovation and Technology: the Roles of E-Commerce, Trade Finance, and National Single Window Environments", (11 - 13 June 2019, Yerevan), sighted that drones are themselves being misused for smuggling where Customs have to embrace the drone technology to combat this kind of smuggling across borders. Drones can therefore be used by Customs for surveillance and monitoring purposes.

Drones are already being used by a few Customs administrations including the US and Dubai / UAE for surveillance and monitoring purposes. Since some express service providers and postal operators are already piloting the use of drones for parcel deliveries at local level in nearby areas, this cannot stop them from offering this service across borders and Customs have to be in line with these emerging trends.

5. Challenges with Use of Drones by Customs

Although the use of drones has brought many advantages to Customs, they should be prepared to deal with the challenges that may be faced, the major one being funding to purchase and maintain the equipment. The drones are quite pricy and needs proper planning and budgeting. The Customs Administration will also need restructuring to cater for a unit to deal with drones. This requires additional staff, infrastructure and funds that go with it. Technical knowhow is a prerequisite where capacity building on use and service/ maintenance of the drones will be needed. Of priority is the need to put in place the relevant Infrastructure as there is difficulty of positioning them to survey the border.

Regulatory requirement is another issue where a permit to operate the drones is mandatory as these are a security concern and require authorisation to import and use. Also, if they fly into another country's airspace there is need for authority and it is not easy to get one. The best would be to ensure they do not cross borders.

The adoption of drones would definitely require relevant legislation where it would be necessary to incorporate law in the current Customs Law. The issue of privacy and the right to privacy is another thorny issue. Drones undermine privacy and their surveillance records the daily lives of people living in within and along the border especially where Customs will use its drones to support the operations of other law enforcement and border agencies including the army and ZRP. There is therefore need to ensure establishment of more robust privacy protection legislation adherence. Customs should be allowed to operate the drones without a warrant just like some Customs searches.

Weather can be a challenge where ground crew's view may be detracted but this does not happen much at border posts as it rarely rains or become cloudy. Inland ports may from time to time experience this challenge where smugglers can take advantage if drones cannot be flown due to bad weather.

History has proved that drones have a danger of crashes because of human error, mechanical or power failure or a combination. Considering the cost of acquiring them, all effort has to be made to avoid any avoidable errors.

Another challenge to consider is that it has been proved that facial recognition programs are prone to errors and therefore Customs and their fellow law enforcement agencies run the increased risk of detaining law-abiding people as suspects.

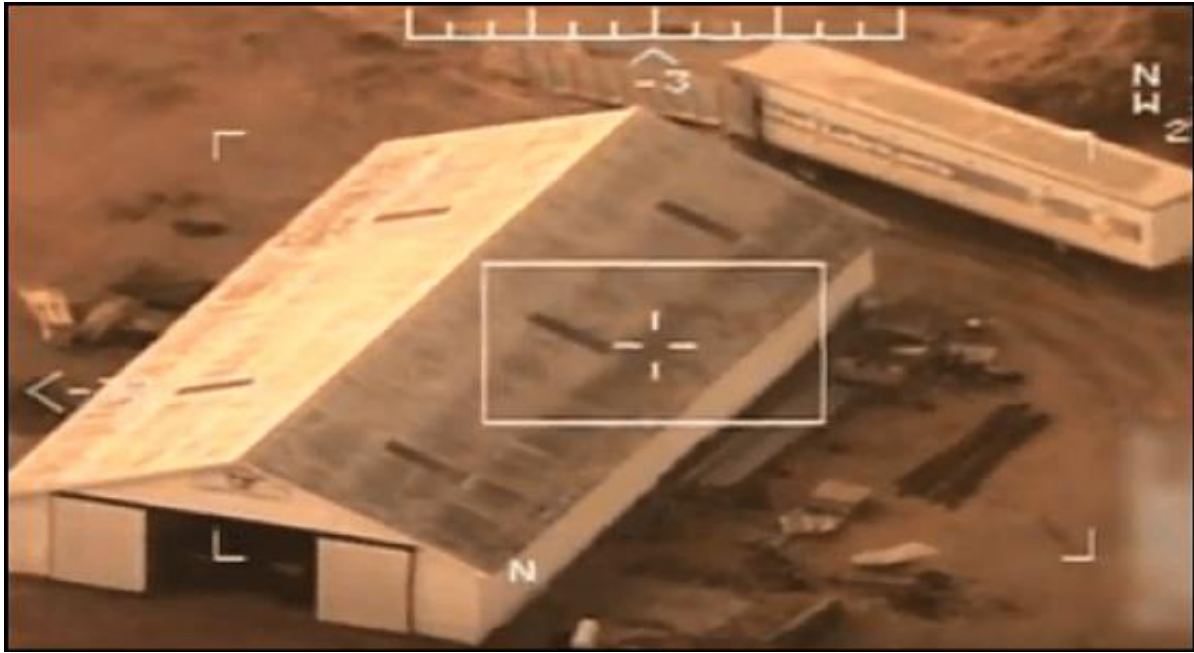
Appropriate law or memoranda of agreement on sharing of drones should be in place before accepting to share drones as there can be a loophole allowing local police, army or immigration to evade local democratic scrutiny of drone use or the requirement for a search warrant where they will operate under cover of Customs.

Also, the drone can be brought down by adversaries to sabotage the project.

The WCO also highlight the concerns relating to safety, security and privacy as well as regulatory issues including managing airspaces, potential certification standards, and operational procedures, (Trade Facilitation: Promoting Inclusive Trade through Innovation and Technology: The Roles of E-Commerce, Trade Finance, and National Single Window Environments, 11 - 13 June 2019, Yerevan)

6. Examples of Drone Images

Predator Electrical Optimal



Source: U.S. Department of Homeland Security.

Small Drone Image of the Border



Source: U.S. Customs and Border Protection.

7. Benefits of Using Drones as a Trade Facilitation Tool

There are several benefits to use of drones by Customs ranging from short term, medium- to long-term benefits. These include easier border patrols and general surveillance. With cooperation from the other side of the border, it can be used to even

do surveillance along the border post for example by Zimbabwe or South Africa on either side of the Limpopo river.

Although drone surveillance degrades privacy, it can facilitate transparency through aerial surveillance spots known to be smuggling hubs such as bus termini and the train station, especially those in border towns, where real-time high-quality video feeds of smuggling activities can be obtained.

Drone surveillance can be used for queue management of travellers, private and commercial cross-border motor traffic within the border and overall border management.

With further technology development, a drone can have facial recognition software that can compare images with those in law enforcement databases and make it easier to apprehend a person without confronting them at scene. A video of all happenings will also be available. State and local border agencies can request drone assistance for routine law enforcement matters where they can aid a local arrest. Data will be available instantly and can be easily shared even within the region, continent or globally. The drone resources can even be shared among border agencies locally or across the border. Border posts can therefore have virtual walls which are easily manned by the drones together with a ground team which can take action e.g. for smugglers or rationalisation of staff by a manager through drone queue management.

Some unscrupulous activities can easily be detected and images taken within the Customs yard or at other relevant spots and information can be relayed for action to be taken on particular vehicles. Within most Border Posts, there are touts and fraudsters who spend their day working to issue fake documents such as Temporary Import Permits (TIPs). A drone can assist in monitoring such activities.

Drones can reduce the risks that Customs Officers face from armed smugglers. They will therefore help to protect Customs Officers and other border agencies in much the same way that they protect the army or other security agents by removing them from positions in which they can be attacked or harmed by environmental hazards. Surveillance could help to protect border guards as well. Videos of attacks on border guards could be used to track down those who escape capture. Drones also reduce Officers' risk to environmental hazards like post war landmines in some Border Posts. They can operate in areas where it might be difficult to use other border protection techniques, for example surveying lakes, harbours, dams which share borders like the Kariba Dam between Zimbabwe and Zambia as well as rough terrains like the Zambezi Escarpment.

Drones can watch for border crossers longer than vehicles on the ground or officers on foot and can bring unprecedented for not only monitoring illegal border crossers but also anyone living near their patrol routes.

8. Recommendations to Customs Administrations

If any Customs Administration chooses to embark on the drone project, it is recommended they initially do a cost-benefit analysis before engaging in the drone project to ensure it lives up to its expectations. There is need to analyse its contribution to border security and the issue of infringement on residents' and other concerned citizens' privacy and how this could be managed. A drones unit should then be set up and the relevant staff should be adequately trained to avoid unnecessary loses.

Before commencement of the drone project, it is important to disclose details about the technology's introduction and its capabilities, including information about the type of data to be collected, how long the data will be kept, when and which data it will be shared and with whom it will be shared with. Collection of unnecessary data which infringes on human rights should be avoided.

Drones should solely be used for border management and security operations to facilitate legitimate trade even when shared with other agencies. Surveillance should be done within 5 km of the border post or within the Customs Area for areas like the container depot or dry ports to ensure sole use for border management and avoidance of infringing on privacy rights.

Where the drones are used to support other border agencies' and local operations, Customs should ensure that its drone pilots comply with the relevant legislation, including warrant requirements and court orders where necessary. Resource sharing should be considered even beyond our borders especially for the One Stop Border Post (OSBP) like Chirundu.

There is also a need for a maintenance and replacement plan including continuous training for the drone pilots.

9. Conclusion

As African countries join in the quest to enhance trade facilitation and boosting intra-Africa trade through the Africa Continental Free Trade Area (AfCFTA) using the TFTA, COMESA and SADC as stepping stones, it is prudent that more initiatives be embraced to fulfil the relevant objectives. The African continent has worked hard especially through the Customs Administrations, which are key participants, by implementing several initiatives to enhance trade facilitation. Some of these include automation of procedures including use of Simba and ASYCUDA as well as their risk management parameters, processes to facilitate transiting goods, ISO Certification, human capital development, fulfilling international convention obligations (including the TFA, Revised Kyoto Convention, SAFE Framework of Standards), use of non-intrusive instruments like scanners and the canine "friends", electronic cargo tracking and many more.

The introduction of drones as a trade facilitation tool will further enhance legitimate trade facilitation, and also boost intra-Africa trade as the continent thrives to ensure

successful positive economies. Use of drones will suit well with the WCO's encouragement of Customs Administrations to apply innovative technologies.

It is worth it to invest in drones for Customs administrations in anticipation for better results. Those who have introduced drones have recorded a drop in smuggling statistics where this is actually a positive outcome. One of the reasons for this drop could likely be that people would be aware of the project and would not dare to venture into smuggling through unauthorised points. The authorities need to ensure awareness of the project and the consequences. This therefore means most illegal trade would be diverted back to the official port where other necessary controls should be in place to ensure compliance and trade facilitation.

In the long run, the benefits of adopting drones as a trade facilitation tool outweigh the disadvantages. Their use and the interest drawn from both private and public sectors, will lure investors to set up plant to manufacture them within the continent and tertiary institutions will include drone engineering and piloting in their curriculum, thus boosting local, regional and intra-Africa trade.

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About the author



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