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Survey on the use of Remote Practices in Food Safety

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Executive Summary

With the evolution of information and communication technology (ICT) and the emergence of global food trade, food systems became complex networks where product safety should remain a priority to ensure consumers' health. During the COVID-19 pandemic, control officials and the food industry were obliged to develop ways to ensure continued compliance with food safety regulations that were consistent with the lockdown requirements. Many started to use remote practices to deliver their obligations whether they are regulators (official control), food certification auditors (third-party audits), or associations/buyers (second-party auditors). ICT solutions were also deployed to conduct remote audit in regulatory frameworks where regulators have assessed each other's food control system using commonly known communication platforms.

In 2022, the United Nations Industrial Development Organization (UNIDO) received a project preparation grant from the Standards and Trade Development Facility (STDF) to conduct a survey within the regulatory community on the application of these remote practices. The aim was to determine the extent to which remote practices had been applied and to identify best practices and lessons learned.

An electronic survey was developed using Survey Monkey and the survey link was sent to 1152 contacts in food safety via email, inviting participation. Two hundred (200) respondents participated in the survey by the final deadline of July 22, 2022. Most respondents were regulators (69%) and from the food industry (14.5%).

The majority of the sample group who had experience of using remote audit/inspection felt that it had a role to play in food safety, especially when targeted according to risk and used as part of a hybrid model. Most felt that it could not and should not completely replace onsite audit/inspection but form part of the toolkit used by inspectors/auditors.

The lack of internationally accepted guidelines was identified as a significant gap in the successful delivery of remote practices

The main difficulty experienced by the sample group was unsatisfactory internet access during the audit/inspection process.

Based on the survey responses, the main recommendations are:

- Internationally accepted guidelines on the use of remote practices in the delivery of food controls and food safety audits need to be developed.
- Any existing formal evaluations on the impact of remote practices should be published for consideration and, where gaps exist, further controlled evaluations should be carried out on the impact of remote delivery on compliance, public health and resource implications.

ACRONYMS

CA	<i>Competent Authority</i>
CCFICS	<i>Codex Committee on Food Import and Export Inspection and Certification Systems</i>
Codex	<i>Codex Alimentarius Commission</i>
COVID-19	<i>Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)</i>
EU	<i>European Union</i>
FAO	<i>Food and Agriculture Organization of the United Nations</i>
FBO	<i>Food-Business Operator</i>
HACCP	<i>Hazard Analysis and Critical Control Points</i>
IAF	<i>International Accreditation Forum</i>
ISEAL	<i>International Social and Environmental Accreditation and Labelling Alliance</i>
LA	<i>Local Authority</i>
NCA	<i>National Competent Authority</i>
SPS	<i>World Trade Organisation Sanitary and Phytosanitary committee</i>
STDF	<i>Standards and Trade Development Facility</i>
UNIDO	<i>United Nations Industrial Development Organization</i>
vTPA	<i>Voluntary third-party assurance programme</i>
WHO	<i>World Health Organization</i>
WTO	<i>World Trade Organization</i>

Introduction

The traditional delivery of food controls has been based around a visit to the food premises by an authorised food control official. The findings made during that visit inform any actions that will be taken to protect public health. This format was developed to identify safety hazards that could be recognized through organoleptic inspection and resulted in major improvements to food safety and quality in the previous century. In the latter part of the 20th century, food production became increasingly an industrial process. Many of the emerging hazards were unable to be detected through the traditional organoleptic methods. Food safety management systems such as HACCP were developed to address these hazards. The result has been that food control officials increasingly rely on the analysis and interpretation of data to evaluate food safety. The industrial nature of the food industry coupled with globalisation of the supply chain also resulted in the development of an audit process where food businesses were evaluated against a pre-agreed standard. In some cases, the audit is carried out internally by the organisation but the development of voluntary third party assurance (vTPA) audits is an important aspect of the modern food industry. Both the delivery of official food controls and vTPA are based around premises/organisation visits by the inspector or auditor. The globalisation of the food industry and increasing volume of trade in food stuffs has created the need for regulators to ensure consumer safety from imported as well as home produced goods. Regulators have therefore started to assess each other's food control systems as part of this trade related risk management.

On March 11, 2020 the World Health Organisation (WHO) announced a pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (commonly referred to as COVID-19). Many countries responded by implementing movement restrictions both internally and externally. These restrictions are colloquially referred to as 'lockdown'. The extent of restrictions varied between countries and over time, but the objective was to try and limit the spread of the virus. Naturally the food industry needed to keep working to feed the population (as did the medical laboratories to provide critical services) but conducting audits and inspections in those premises became problematic, given the restrictions on travel and the number of people permitted to gather together.

The use of remote practices was being used prior to the SARS-CoV-2 pandemic. It was most developed in industries/situations where access to the inspection site was difficult or dangerous, for example bridges (Chun et al. 2020), or where shutdown during inspections was required such as power installations and petrochemical facilities (Huerzeler et al. 2012). There was increasing use of office-based practices to evaluate documents or review data (Wakelin-Smith and Vinter 2021) at a time other than during the on-site visit. The use of technology was also being trialled in a small way in the meat industry to reduce the high cost of meat inspection. Research carried out in Sweden indicated that it was possible to use remote practices to inspect carcasses in certain circumstances without negative impact on public health (Almqvist et al. 2021). However, at the start of the COVID-19 pandemic, the process of remote practice was not yet widespread in the food industry. Auditing and the delivery of official controls was still carried out mainly in the traditional manner involving onsite visits. This resulted in regulators from different countries travelling to trade partners to assess their food control functions and the food safety management system of exporting businesses.

Definitions of audit and inspection

Food Control Officials carry out a number of actions, some of which may be formally defined in a country's food legislation. The terms audit and inspection are defined by Codex Alimentarius (CXG 20-1995).

Audit

is a systematic and functionally independent examination to determine whether activities and related results comply with planned objectives.

Inspection

is the examination of food or systems for control of food, raw materials, processing, and distribution including in-process and finished product testing, in order to verify that they conform to requirements. (CXG 20-1995)

An audit is an evaluation carried out against pre-agreed objectives, typically an accepted standard. The International Accreditation Forum (IAF) define audit as a:

Systematic independent documented process for obtaining records, statements of fact, or other relevant information and assessing them objectively to determine the extent to which specified requirements are met.

An inspection is an evaluation of compliance with the food legislation. An inspection is carried out by an officer authorised by the Competent Authority (CA) with the responsibility for the delivery of official food controls. Non-compliance can result in enforcement action against the Food Business Operator.

An audit can be carried out by correctly trained personnel who are not authorised by the Competent Authority. Audits may be carried out on behalf of the Food Business Operator or other actor. Inspections are always carried out on behalf of the Competent Authority to fulfil statutory duties. Competent Authorities may derogate some duties which are carried out by auditors but these are usually limited in scope and do not usually have the option for enforcement action when non-compliance is discovered.

Audits and inspections may be conducted by a variety of actors for a number of reasons at different levels. Audits may be internal or carried out by an external accreditation body such as voluntary third-party assurance audits. A National Competent Authority (NCA) may carry out both inspections and audits. The NCA can inspect food premises, conduct audits of the NCA in an exporting country and audit local or municipal authorities/inspectors. Food businesses may be both the recipient of audits and inspections and conduct audits in their suppliers. Figure 1 illustrates some of the main audit/inspection relationships.

During the COVID-19 pandemic, control officials and the food industry were obliged to develop ways to ensure continued compliance with food safety requirements that were consistent with the lockdown requirements. Many started to use remote practices to deliver their obligations.

Survey

The COVID-19 pandemic created an environment which encouraged regulators to use new technologies as part of their enforcement function and international trade negotiations. The deployment of these new technologies has raised questions among countries and international partners involved in food safety, particularly on the effectiveness of outcome in terms of public health protection. Remote practices in inspection and audit offer a new option for countries which find it challenging to conduct on site audits or inspections, for example due to geographic issues, such as distance, accessibility or dispersed locations of micro-islands. The United Nations Industrial Development Organization (UNIDO) was approached by the Standards and Trade Development Facility (STDF) to conduct a survey within the regulatory community on the application of these remote practices. The aim was to identify best practices and lessons learned after two years of the COVID-19 outbreak. UNIDO has conducted similar research on the use of the vTPA programs.

Aim

The aim of this survey was to improve understanding of the use of remote audit/inspection in the food industry and in the delivery of official food controls.

The objectives are:

- To establish the extent to which remote audit/inspection is already in use by food control officials and regulators in the sample group
- To collate examples of good practice
- To identify barriers and limitations relating to its use in the food industry and for the delivery of official food controls.

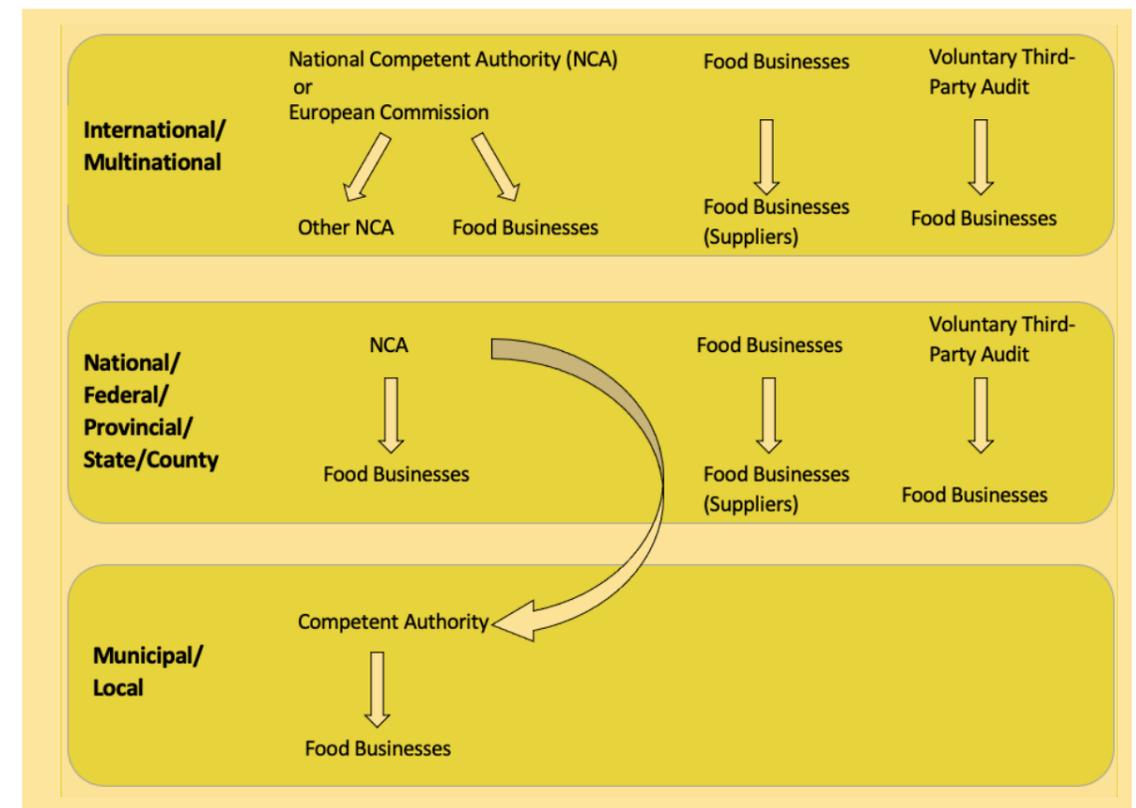


Figure 1- Audit/Inspection Relationships

Methodology

To achieve the study objectives an electronic survey was developed using Survey Monkey and distributed electronically.

Sample population

The population for this survey was defined as anyone in food with experience or interest in the use of remote audit/inspection. This broad definition made it a challenge to define a representative population so it was decided to try and reach as many participants as possible to include the widest variety of responses. There was no pre-existing contact list which would have been appropriate for this survey. Therefore, the survey was distributed using email lists from relevant organisations with an invitation to cascade to any other contacts who might have a contribution to make.

The sampling would be described as non-probability, judgment sampling in that participants were selected based on the researchers' knowledge of their remit. The sample group included personal contacts, advertised heads of competent authorities and other relevant organisations. Table 1 shows the organisations and mailing lists used.

WTO Sanitary and Phytosanitary Committee (SPS Committee)
Codex Focal Points (the official national communication agent (for and on behalf of the member country) to the Codex Alimentarius Commission)
African Free Trade Association
EU Heads of Agencies
Arab Food Safety Task Force
Codex Committee on Food Import and Export Certification and Inspection (CCFICS)
National Competent Authority contact in UK (Food Standards Agency),
Food Safety Regulators
Alumni MSc Food Safety Hygiene and Management (University of Birmingham)

Questionnaire development:

The main aims of the survey were:

- to establish the extent to which remote practices have been in use
- to collect general information on how they had been carried out
- The survey was divided into sections.
- Part A and B collected information about the participant, the organisation represented and the food control context

- Part C related to the definition of remote practices, especially remote audit and remote inspection, and established whether the participants had been involved in these practices. According to the participants answers they moved to one of three sections.
- Part D was for participants who had carried out remote audit or remote inspection
- Part E for those who had not carried out remote practices but were considering it
- Part F for those who had not carried out remote practices and were not planning to.
- The full list of questions can be accessed at

<https://xfiles.unido.org/index.php/s/rKWky4HS7YWQ4mG>

Validation

The survey questions were informed by a variety of sources. These included published references (see reference list) and discussion with contacts who had been involved in the delivery of remote practices. An informal working group was set up by STDF together with UNIDO. This working group has met online to discuss the scope and shared further inputs to evaluate the questionnaire.

A questionnaire should have validity. As this is a survey of the extent of practices in a non-probability sample group, there is no attempt to demonstrate statistical validity. It does not attempt to predict behaviour, only to describe what the participants wish to share, so criterion validity was not established.

Face validity was established by using food safety specialists with experience in inspection and the delivery of official controls.

Content validity was established using

1. Existing publications on remote audit /inspection to identify areas of relevance.
2. Contact with inspectors using remote inspections
3. Internal working group formulated among relevant STDF partners and selected regulators with strong knowledge on data and use of technology in food safety control

Drafts of the survey were scrutinised by the informal working group and by academics at the University of Birmingham. University of Birmingham academics were approached because there is a specialist food safety group with considerable expertise in both the delivery of official controls and the use of questionnaire surveys.

The final draft was piloted by inspectors at the University of Birmingham. Comments and corrections were incorporated into the final survey.

The survey was sent out to the first contacts on 6 April 2022 with a deadline of 20 May, 2022. The same survey was resent to additional contacts on 28 June, 2022 with a submission deadline of 20 July 2022.

Analysis

As this was a survey to determine the extent of remote practices in the sample group, with non-probability, judgement sampling, the results are reported as the per cent of respondents giving each answer. Many questions had multiple answer option.

Where respondents were invited to use text boxes for their own comments, the comments were categorised and the number in each category reported.

Q31 and 32 asked about the collection of data and the results were analysed using Pearson

Chi square test, with an odds ratio calculated.

Results

The survey link was sent to 1152 via email, inviting participation. Two hundred (200) respondents participated in the survey by the final deadline of July 22, 2022. As contacts were invited to cascade the survey link, it is not possible to calculate a response rate in the normal fashion

Demographics

All participants (N=200) answered the questions in part A of the questionnaire. This asked about the respondents' organisations and responsibilities. There was representation of all the main players as described in Figure 1 at all levels, although there was uneven distribution across the groups.

Competent Authorities /Regulators were the largest group making up 69% of participants. This reflected the use of the SPS and Codex emailing list as the primary invitation channels. The Food Industry provided 14.5% of answers. Respondents identifying as auditors were underrepresented comprising only 4% of the sample, but from the comments it can be seen that many of the respondents in the first two groups were also auditors. Other participants represented industry or trade bodies (4%), standards/accreditation or certification organisation, including laboratories (4%) and international/intergovernmental organisations including the European Commission.

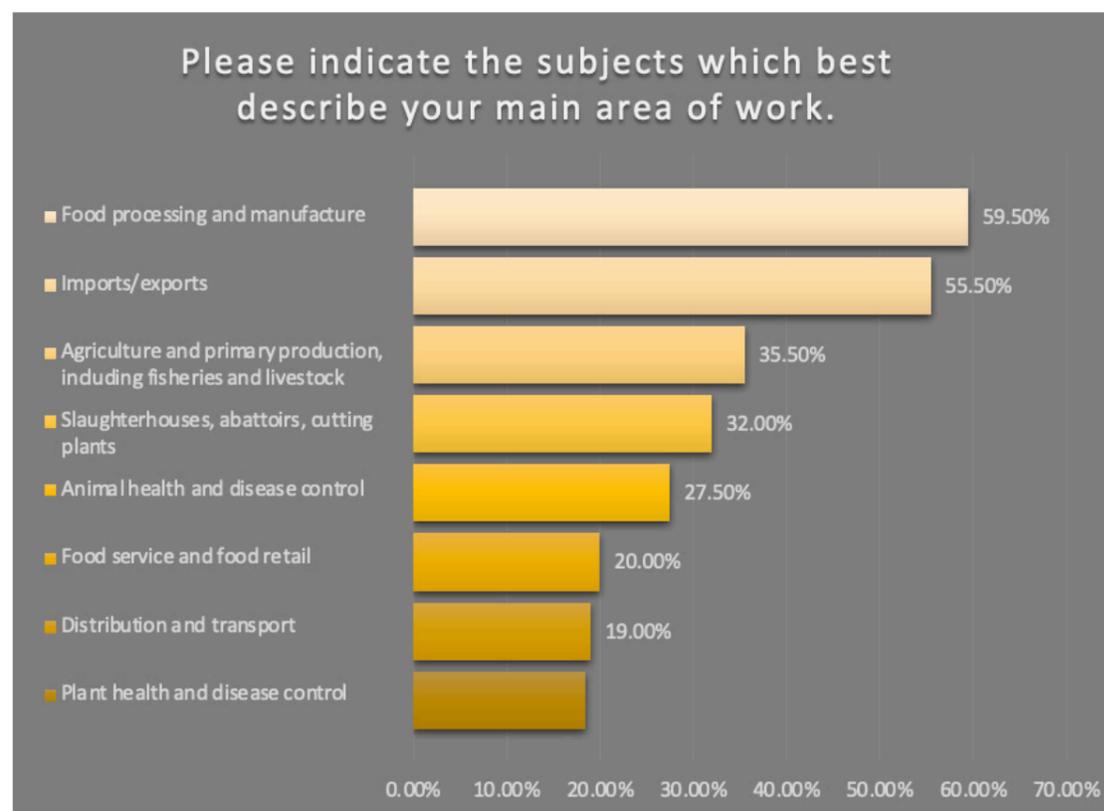


Figure 2- Q4 Subjects which best describe the main area of work.

Respondents were mainly from International/Multinational (21.5%) or National/Federal organisations (68.5%), reflecting the responsibilities and mandate of initial contact group. Respondents from the provincial/state/county level or from municipal/local level were much smaller groups, each providing 5% of the answers.

There was a wide range of responsibility and expertise in the sample group (Q3 and Q4). There was representation for the full food chain from primary products through to retail and food service, including import/export. As agreed by the informal group, respondents with responsibility for plant and animal health and disease control also participated in the survey to capture possible remote audit scope between food control systems.

Response groups

Questions 13 and 14 distinguished between respondents who were carrying out remote practices from those who were not.

Just over half of the respondents (51%, N=101) have carried out remote practices. These participants answered the questions in part D. Fifty-six respondents (28%) did not carry out remote practices but are considering doing so the future. These respondents answered Part E, (N=56). The smallest group of respondents (7%) were those who do not carry out remote practices and are not considering it. This group completed Part F (N=13). A further 31 respondents (16%) had not carried out remote practices but were unable to say whether it was under consideration in their organisation. These respondents did not answer any further questions. In total, 170 of the 200 (85%) respondents made a contribution on remote practices.

Part D carrying out remote practices (audit or inspection)

The questions in part D were completed by 101 respondents who had carried out remote inspections/audit or whose organisations had done so. (N=101).

Drivers for the deployment of remote practices Q15-19

Q 15 and 16 established how long the respondents had been conducting remote practices and the reasons for doing so. The majority of respondents (91%) gave COVID-19 restrictions as the reason for carrying out remote inspections or audit and 90% had been carrying them out for 2 years or more.

Of the ten respondents who did not select COVID-19 restrictions as a reason for carrying out remote audit or inspection, 5 (5%) selected 'to save or target resources', 2 (2%) carried out remote audit or inspection at the request of another agency or authority and 2 (2%) carried it out as the preliminary stage to an onsite audit.

Question 16 had a multi answer option and 16% of respondents answered that it (carrying out remote inspection or audit) was due both to COVID-19 and to save or target resources, while 13% said it was due both to COVID-19 and as a preliminary audit.

Application of Guidance and Protocols (Q18 and 19)

Q 18 and 19 asked about guidance and protocols. The majority of respondents (75%) said no or don't know when asked if they had followed existing guidance or templates. Most respondents (69%) had developed their own protocols, standard operating procedures or guidance. These were developed by adapting various existing standards and guidance to make them applicable for remote practices. These included documents such as CAC/GL 26-1997 and FAO (Food and Agricultural Organisation of the United Nations) COVID-19 Guidance

for preventing transmission of COVID-19 within food businesses. Existing certification standards were also mentioned. One respondent reported that their organisation carried out remote audits in other (non-food) sectors and they were able to adapt those guidelines and protocols. The China National Food Safety Standard was referenced by two respondents.

Context for applying Remote Practices (Q 20-26)

Participants were asked when and why remote audit/inspections were used (Q 21). The most common responses were that it would be used for certain premises according to risk (45%) or in certain circumstances to complement face-to-face inspections (41%). In general, the use of remote practices was targeted or restricted (See table 2). Only 13% of

Table 2	
How remote practices were used(Responses to Q21)	
Response	%
It is used for certain premises according to risk	45
It is used in certain circumstances to complement traditional face-to-face inspections	41
It is used for premises which cannot be easily accessed	30
It is used as follow up after on-site visits	29
It is used for certain premises according to sector	26
It is used as part of import approval	23
It is used for certain premises based on historical compliance data	20
It is used to follow up complaints	19
It is used as part of import verification	18
It is used for all premises in the country	13
It is used for certain premises with third party accreditation	11
Other, please specify	21

respondents said it would be used for all premises in the country. Other reasons for deciding to use remote practices are summarised in Table 2. Question 21 had a multi answer option and most participants selected more than one answer, indicating the value of the remote approach in delivering food controls. Q21 had an 'other' text box available for respondents who wished to add commentary. Twelve of the 21 who used the text box highlighted the COVID-19 pandemic as a contributor to the decision making. Four respondents said the use of remote techniques had been in response to third party requests.

The use of remote audit /inspection as part of import approval was identified by 23% of respondents in Q21. In Q22, 21% of respondents said remote audit/inspection was available to all trading partners whose food was imported. Eighteen respondents said no, it was not available to all trading partners and then answered Q23 to explain how the trading partners eligible for remote audit/inspection were selected. Over half (56%) based the decision on equivalence or harmonisation of the exporting country's food control systems. The remaining participants used an evaluation of risk or third-party accreditation to inform the decision.

Looking more widely at the delivery of official food controls, (Q 24) 27% of respondents claimed to use remote practices for all aspects of the delivery of food controls. Sixty-six (66%) answered no, it was not used for all aspects while 8% didn't know.

Q 25 explored how remote audit/inspection was used by those answering 'no' (N=65). The most common uses for remote audit/inspection were for non-urgent visits which were administrative or routine (43%) or as follow up visits to check non compliances identified during onsite inspection/audit (43%). Just over one third of respondents used remote practices when the risk to public health was low (38%) or the history of the business gave confidence in continued compliance (36%).

Q26 asked about the use of remote audit/inspection for the first visit to a new premises. Less than a third (31%) of respondents reported it would be used for a new premises, first visit. Forty (40%) of respondents said no and 15% said 'no' but it was under consideration.

Process Q 27-30

Survey participants were invited to describe how they conducted remote audits/inspections.

Interaction between auditor/inspector and the Food Business Operator/ staff (Q28 & 29)

Remote audits/inspections were conducted using either shared platforms such as Zoom, Microsoft Teams, WhatsApp etc (82%) or an in-house video conferencing interface developed and owned by the authority (18%) (N=100). Respondents also used other communication mechanisms such as email and messaging (54%), and telephone (28%). A small number (13%) used internal management platforms hosted by the food business. One respondent reported successfully using existing software which had been adapted to support remote inspections ('ShowMe and Blitz).

Four respondents said they did not communicate with the Food Business Operator during audit/inspection. Three of these were Competent Authorities and the fourth self-described as an internal auditor.

During the meetings, 75% of respondents took notes. Forty-five (45%) took formal minutes which were subsequently shared and the same number recorded the meetings. Twenty-four of those respondents did both, recording the meeting and taking formal minutes.

Capturing information and data

As mentioned above, (Q29), information capture during contact with the Food Business Operator or staff was captured through formal minutes, notes and recordings.

Supplementary information Q 29, 30, 31,32 N=100

The main way auditors/inspectors accessed supplementary information such as monitoring records, certificates etc was by sharing electronic documents through email, Dropbox, or other platforms (84%).

In a small number of cases the auditor/inspector was given access to the Food Business Operator's data store directly (14%) or the data was uploaded to a site accessible by both the business and official (13%). The least frequent way for auditors or inspectors to access data was via a third party such as a laboratory (10%).

Respondents also reported using screen shots to capture information, printing shared screens and completing checklists to capture information.

Question 32 asked about the opportunity to cross check data. Seventy respondents said they had an opportunity to cross check data provided by the business. The remainder did not have the opportunity (13%), did not know (11%) or did not access any data (6%).

Respondents were asked about their confidence in the data provided (Q31). The majority of respondents were always (16%) or mostly confident (63%) depending on the type and source of the data. Perhaps unsurprisingly, of the people with the opportunity to cross check data (answered yes to Q32), 86% were either always or mostly confident in the data. This dropped to 62% in the group of participants without the opportunity to cross check data. An odds ratio of 4.7 indicates that participants were substantially more likely to be confident of data where they were able to cross check than when they couldn't.

Visual information from the Premises (Q 27 N=100)

The majority of respondents use video recordings to provide the visual information normally collected during an onsite visit. Real time video recordings taken by a member of the business were used by 51% of respondents. Thirty five percent used video recordings taken by a member of the business but under guidance from the auditor/inspector. Other participants used recordings taken by an independent third party (12%) or historic video recordings from the food business. Twenty-three (23%) respondents used more than one type e.g. historic recordings and real time¹. Twenty-one respondents (21%) said they did not use video.

Some respondents used still photographs taken by the food business (35%) or an independent third party (9%). Nineteen (19%) used both still photographs and video to collect visual information.

1 These results have been corrected for the three respondents who answered both that they did not use video recording or visual information and that they did.

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*Sixteen respondents (16%) answered they did not gather any visual information during a remote audit/inspection. Not using visual information was associated with audits of competent authorities (63%, N=16) where visual information of individual food premises is not relevant to the audit.

Question 34 invited participants to briefly describe the process used to conduct remote audit/inspection. From those comments a general procedure on conducting remote audit/inspection was summarised and collated:

1. Preliminary phase

This was the planning step where personnel conducting the audit/inspection made contact with the recipients prior to the audit/inspection. At this step information was shared with the recipient on what to expect from a remote audit/inspection. Typically, it involved confirming agendas, clarifying the scope of the audit, mapping the procedure, agreeing timings and expectations. Key personnel could be identified and appointments made. Preferred data sharing and electronic platforms would be identified and relevant provision made. Documents should be identified and requested for prior scrutiny. Some participants issue pre-audit questionnaires for completion.

2. Document share

The documents requested by the auditor/inspector are provided by the recipient/Food Business Operator using the platforms agreed. This was mainly via email attachment, Dropbox, Microsoft Teams or other commonly available platform. Very few respondents were given access directly to the Food Business Operator's data storage (14%). The documents are requested for review in advance.

3. Pre-audit communication

This is mainly used as a pre-test to ensure communication and electronic links are functioning. If the Food Business Operator has to download software, s/he will be given access and the process tested.

4. Remote audit/inspection

This is the real time communication, meetings, visual assessment, interviews etc which can be said to comprise the actual remote audit/inspection. This phase typically involved gathering visual information where that was appropriate using video or other photographic means, completion of checklists, and the identification of compliance and non-compliance. Respondents highlighted the fact that the same standards and checklists were used for remote audit/inspection as would be the case for onsite, face-to-face audit/inspection.

It was also when the meetings, interviews and discussion with the Food Business Operator/recipient/staff would take place.

5. Closing/end of audit/report

Participants described this phase as being the same as an on-site audit/inspection. During this step, the findings would be identified and further action described. The same information would be delivered in the same format as with on site, face-to-face audit/inspection except that any discussion or debriefing would be carried out using the same platforms as for phase 4.

The full list of respondents' comments for Q 34 is in appendix 3.

Adaptation

Delivering audit/inspection remotely was a new venture for most of the survey participants. Only 11% reported that they did not have to effect any change to carry out remote audit/inspections (Q17, N=101). The most common change reported was to update or renew communication systems (59%). This was followed by training and capacity building for staff in the Competent Authority (54%). Some respondents carried out training for the Food Business Operator (39%). New or updated electronic systems were reported by 43% while 33% needed to buy new equipment. Legislative changes, either for the delivery of controls (18%) or regarding data protection/access (10%) were only reported by a minority of respondents. Approximately a fifth of respondents (19%) altered aspects of data recording, monitoring or management.

Table 3

**Has any evaluation been carried out?
(Q35 comments summary N=100)**

	yes	No
Food Industry Compliance	34%	66%
Public Health	15%	85%
Finance in the Regulator	7%	93%
Finance in the Food Industry	10%	90%
Personnel resources in the Regulator	22%	78%
Personnel resources in the Food Industry	21%	79%
Consumer acceptance	5%	95%

Evaluation

Question 35 asked whether any formal evaluation of the remote practices had been carried out. In general very few respondents had had carried out any formal evaluation of the impact of using remote practices (see table 3).

Some informal evaluation can be made by considering respondents answers to the various questions.

Overall, respondents who had experience of carrying out remote audit /inspection felt the process had benefits. A few respondents (9% in Q37) made comments such as 'great' or 'useful' with no further qualification. However, the majority, while generally positive, identified limitations to the process which defined the conditions under which they felt remote audit/inspection should be used.

The most common difficulty identified by the respondents when carrying out remote inspections/audit was unsatisfactory internet connection. These could be internet difficulties for the Food Business Operator (60%) or the official (37%). For 26% of respondents, it was a problem for both the Food Business Operator and the official. Two respondents mentioned there can be intermittent problems with some areas of a premises (e.g. chillers) inaccessible. (Question 33, N=100).

Being unable to get the required information was an issue for many respondents. Inadequate visual information was identified as a difficulty by 47% of respondents, with a lack of key information highlighted by 26%. Approximately one quarter of respondents experienced difficulty with incompatibility of data sharing or communication platforms (Question 33, N=100).

Q 37 (N=100) invited participants to give their overall opinion on the use of remote audit/inspection in the delivery of food controls. The most common conclusion was that remote audit/inspection could not completely replace onsite, face-to-face inspection/audits (20%). The process was felt to be valuable but not as comprehensive as onsite (21%) for all situations. Many respondents suggested that the process should be targeted according to risk and recommended a hybrid approach (15%).

Respondents felt remote practices had a 'role to play' and were valuable but as one of a set of tools to deliver official controls and ensure safe, compliant food (12%). Remote practices were felt to be good for situations such as documentary checks (10%), for small or remote premises (4%), for low-risk products or premises (3%), or as a preliminary step to onsite visits (1%).

Only 4% of respondents were unequivocally negative, saying remote audit /inspection was ineffective or unacceptable. One of these participants reported that the authority would not be using remote practices in the future and were reverting to onsite inspections now this was permitted by infection control.

Table 4	
Comments on Remote Practices (Q37 summary N=100)	
Comment	Number of respondents
Unqualified positive comment (useful, great)	9
Cannot completely replace onsite, face-to-face	20
Limitations mean it is not always as comprehensive as onsite, face-to-face	20
Should be used as part of a hybrid approach	15
Has a role to play in the delivery of controls	12
Good for certain aspects such as document or preliminary checks	11
Needs to be targeted using risk	5
Completely negative comments	3

Table 4 summarises some of the more common remarks.

Some respondents in Q37 also made comments about resources. Six respondents (6%) highlighted savings in resources due to remote practices. These savings were related to reduced time and/or costs, mainly associated with reduced travel. Some respondents (3%) found the actual audit/inspection process to be more time consuming than on site audit / inspection owing to the increased preparation time required.

One other important comment made by a small number of respondents (3%) was regarding the need for interaction between the auditor/inspector (officials) and the premises. Respondents emphasised the need for all parties to understand the process, the criteria and the expected outcomes. This was also highlighted in Q34 where 10% identified planning and pre-audit communication as essential and reflected in Q17, where 39% of respondents reported carrying out training for the Food Business Operators.

The full list of comments can be found in annex 4.

Part E and F reasons for not carrying out remote practices.

The reasons why respondents have chosen not to carry out remote audit /inspection were explored in part E and F. This was a smaller group of respondents, N=56 for part E and N=13 for part F.

Part E was completed by respondents who are not currently carrying out remote practices but are considering it in the future. The main reason given by this group for not carrying out remote practices (Q39) was the lack of available protocols (64%). This was consistent with Q40 where 45% of the group identified the lack of internationally accepted standards or guidance as one of the main barriers to implementation and Q 41 where 36% selected

the development of codex guidelines or national guidelines as the most significant change needed.

Question 39 (why you are not carrying out remote audit or inspection) also had a multiple answer option, with respondents being invited to select all answers that applied. Respondents selected the lack of required equipment and legislative barriers (both 38%) as the second most significant reasons for not carrying out remote practices. There were also concerns in this group about the level of control offered by remote audit/inspection compared to face-to-face, ranging from 32% in Q39 (reason) to 50% in Q40 (main barrier) where the same answer was available to a differently worded question.

Q42(N=56) asked what the respondents considered to be the main advantages of using remote audit/inspection. This was a free text question, so respondents were able to answer as they wished. The majority (59%) answered that it would either save resources or better manage resources through efficiency and optimization.

Participants were also asked to identify what they considered to be the main risk associated with the use of remote audit/ inspection (Q43, N= 56). The most common concern (34%) was the quality of information that would result from remote audit/inspection and whether it would be reliable, comprehensive and accurate. The next most common concern (24%) was about the transparency and legitimacy of the data. Several respondents (18%) actually used the word 'fraud' in their comment. There were also concerns about communication difficulties (18%) and information security (11%).

These concerns are reflected in the main reason given by respondents for not carrying out remote audit or inspection and not intending to do so (Q44). The majority (77%) answered that they did not consider remote practices to offer the same level of control as face-to-face (N= 13). The second most common reason (54%) was that there is no accepted protocol or guidance. The same number (54%) said that if internationally accepted guidelines became available, they would consider carrying out remote inspection/audit. Twenty three percent (23%) still said they would not while the remaining 23% answered 'don't know'.

Discussion

Sample group

The population for this survey was anyone in food safety with experience of or interest in the use of remote audit/inspection. This made it a challenge to define a representative sample group but since there was no plan to evaluate predictive behaviour or measure other such criteria, this limitation did not weaken the validity of the survey. The main objective was to capture as much information on existing practices as possible. This meant maximizing contacts to ensure all aspects of the audit/inspection relationships, as described in Figure 1, were represented. Responses were received from all of the described groups although for some (e.g. local/municipal inspectors) the group size was very small. This is likely to be an artefact of the way the survey was distributed but could also reflect limited remote activities in the sector. Another underrepresented group, auditors carrying out vTPA, have been highly active in the delivery of remote audits during the COVID-19 pandemic (WTO 2022) as reported at the SPS Thematic Session on Remote audit and verification in regulatory frameworks in June 2022. Further work focusing on these under-represented groups would clarify matters and indicate the full extent of remote practices in the food industry.

There was no pre-existing contact list which would have been appropriate for this survey. Therefore, the survey was conducted using the email lists from relevant organisations with an invitation to cascade to other contacts who may have a contribution to make. The response was good and covered a wide area of responsibility and expertise, including plant and animal health, food export and imports, and the full food chain from primary products through to retail. The main risk with this type of distribution is the over representation of some groups and underrepresentation of others as discussed above. However, the results should be considered meaningful for those groups well represented i.e., Competent Authorities/Regulators and the Food Industry, working at international and national level.

Driver for remote practices

As expected, respondents reported that the main driver for carrying out remote audit/inspection were the restrictions created by the COVID-19 (SARS-CoV-2) pandemic. The length of time remote practices had been in use largely reflected the start and duration of the pandemic (Q15&16).

The survey also gathered information from participants who had not conducted remote audit/inspection. They were asked to clarify why they had not done so and how they had conducted audit and inspection during the pandemic. In the group choosing not to conduct remote audit or inspection, 39% gave the lack of available protocols as the reason. They highlighted the need for Codex and national guidelines to be developed (Q41).

When asked how audits and inspections were carried out during the pandemic if remote practices were not used, 62% respondents answered that they had continued with face-to-face audits/inspections but with an altered frequency. This group was very small (N=13) so the results may not be entirely representative of the larger population.

Remote audit/inspection

Overall, the sample group felt the use of practices such as remote audit/inspection had value. Those with experience of conducting remote audit/inspection felt that it was a useful tool in the delivery of official controls and food safety, but that remote delivery could not universally replace on site, face-to-face practices. Many respondents reported they had restricted or targeted remote practices.

Respondents favoured the adoption of a 'hybrid model' where the remote practices complement the use of on site, face-to-face delivery. A hybrid model can be defined as a combination of remote practises such as documentary evaluation, with on site or in person activities. It may also be referred to as a partial remote audit/inspection. The IAF working group task force document supports this position stating that: 'remote auditing activities are designed to support the existing accreditation process' (IAF 2021). According to the International Social and Environmental Accreditation and Labelling Alliance, ISEAL (2021) a hybrid audit may be more effective than either the traditional on-site audit or a fully remote audit alone. A hybrid audit allows a more in-depth evaluation of the documentary material as this is provided in advance. That evaluation can inform the onsite activities, targeting specific areas as appropriate. Overall, it may serve to make the on-site process more efficient.

Respondents considered that remote practices should be used according to risk (Q 21, Q25 and Q23). The use of risk to public health in the context of delivery of official controls is commonplace and well documented in line with principle 6 of the Codex Principles and Guidelines for National Food Control Systems CAC/GL 82-2013. Competent Authorities will have systems in place for risk determination and these can be applied to remote audit/inspection as well as onsite. For example, in EU countries, the competent authority will follow the general rules on official controls in Regulation (EU) 2017/625, article 9 when determining risk. With regard to remote audit, the IAF (2021) suggests that one aspect of risk determination should be the capability of the recipient organisation to accommodate a remote audit as well as whether the audit objectives can be achieved using remote practices. Other examples from the survey participants of how remote practices can be beneficial included their use for specific issues such as follow up visits, documentary checks, administrative activities or as a preliminary to the onsite. Annex B of the IAF Food Working Group Task Force Document lists these and other activities such as fraud vulnerability assessments where remote audit may be appropriate.

Equivalence of remote and face-to-face audit/inspection

There was some concern about whether remote practices could give the same level of control as face-to-face, onsite activities. In Q 39 one third of the sample who had not carried out remote audit/inspection felt that remote inspections/audits did not give the same level of control and half highlighted this as the main barrier to implementation (Q40). Those respondents who have not carried out remote audits/inspection and do not intend to (part F) selected this option as the main reason (77%) they will not be considering the use of remote inspections (Q44).

Those respondents who do have experience of carrying out remote audit/inspections (part D) were not asked directly if they felt remote activities gave the same level of control so as

to avoid asking a leading question but in Q 37, they were invited to give their own opinions of the value of remote audits/inspections to deliver official controls. Of the 100 participants who provided an opinion, 21% volunteered they felt remote was not as comprehensive as onsite face-to-face. This is supported by the responses in Q 33 where many respondents reported they were unable to access the required information using remote practices. To quote one participant **'you can check if there is a system but not if it works'**.

Respondents who had carried out remote audit/inspection were also asked about their confidence in the information they were able to capture. Where respondents had some way of checking the data, unsurprisingly perhaps, they were much more likely to be always or mostly confident in its accuracy and validity.

It is important that a remote audit/inspection achieves the same standard/level of control as an onsite, face-to-face audit/inspection. An evaluation of the extent to which data that would normally be collected in an on-site audit/inspection can also be gathered accurately and comprehensively during a remote audit/inspection should inform the decision to use remote audit/inspection. The IAF suggests carrying out a risk assessment to determine if all the audit objectives can be achieved using remote practices and if they cannot, how this will be addressed. Any form of equivalence or alternate means of determining the same compliance could also be considered.

Guidance on Conducting Remote Audit/Inspection

Just over half (51%, N=100) of the participants had experience or knowledge of the delivery of remote audit/inspection. They were asked how these were carried out by their organisation and about the use of guidance and protocols. Most respondents (69%) had developed their own protocols or guidance (Q19). The proved necessary as there is a gap in the existing internationally accepted guidance relating to the use of remote practices in food, especially for inspection. To quote one respondent's answer to Q18 (asking which guidance was used) **'There was nothing at the time and still isn't'**.

Respondents reported that they developed protocols and guidance by adapting various existing standards and guidance to make them applicable for remote practices. These included internationally accepted documents such as CAC/GL 26-1997 and FAO COVID-19 Guidance for preventing transmission of COVID-19 within food businesses, national standards such as The China National Food Safety Standard and existing certification standards.

One respondent reported that their organisation carried out remote audits in other (non-food)) sectors and they were able to adapt those guidelines and protocols.

In August 2021 the IAF published version 3 of the IAF Food Working Group Task Force Document entitled Remote Auditing Activities for Accredited Food Safety Certification. This contains extensive guidance and discussion of the delivery of remote audits in the food industry including reference to HACCP and other safety matters. However, the use of remote practices in the delivery of official food controls such as **inspection** is not covered, being outside the remit of the IAF. There remains a gap in the internationally accepted guidance for use in remote inspections.

The responses to Q18 and 19 indicate a need for the development of internationally accepted guidance on the remote delivery of official controls, reflecting accumulated expertise and good practice. This would encourage consistency and high standards in the use of remote practices.

Process

Information provided by respondents with experience of conducting remote audit/inspections was collated and used to develop an outline of the process that was commonly followed

Preliminary phase

Many participants highlighted this as crucial to the subsequent success of the remote audit/inspection. Since very few respondents used remote practices for all premises or all circumstances, the preliminary phase should include an evaluation of whether any part of the process should be remote, and if so which parts. If the audit/inspection is to be a hybrid audit/inspection, it would be appropriate to clarify that process in the preliminary stage.

The IAF guidance (2021) confirms the importance of the planning stage, including the cooperation of the recipient. If a pre-audit questionnaire is to be used it would be part of this stage.

1. Document share

The majority of respondents asked for specific documents to be shared in advance. In some cases, this was the only part of the audit that was remote as it preceded an onsite, face-to-face inspection as part of hybrid delivery. Some participants commented that this document evaluation was very time consuming, taking longer than it would have done during an on-site visit where the Food Business Operator or other staff would be able to target documents and data to expedite the process.

2. Pre-audit communication

Not all respondents mentioned this phase but those who did highlighted its importance for successful completion of the audit. Electronic and communication links should be tested, equipment checked, and availability of relevant staff confirmed.

3. Audit/ inspection (Real time communication, meetings, visual assessment, interviews)

This phase corresponds to the onsite step of a normal audit/inspection. Visual information (real time and historic video recordings, photographs) and other data are gathered to determine compliance/conformity and non-compliance/non-conformity. The use of geolocation to confirm the correct site was mentioned by several participants.

Some participants commented on the limitations of this phase. Using platforms such as Zoom, Microsoft Teams etc was felt to be a very intensive, time consuming and exhausting process. Several respondents mentioned that it was necessary to reduce the amount of time for a single session but to have more sessions than would be the case for on site, face-

to-face audits/inspection. This actually extended the time needed to complete the audit compared to an onsite, face-to-face audit/inspection.

There were concerns that clues to noncompliance could be missed as there was no facility for organoleptic evaluation. It was also mentioned that the informal or nonverbal cues in an onsite visit were missing which could limit an inspectors' ability to identify problems.

4. Closing/end of audit/report

This step is effectively the same as in an onsite audit/inspection. The same information would be delivered in the same format. Any discussion or debriefing could be carried out onsite for a hybrid delivery or using the same platforms as used in step 4 if completely remote.

Limitations

The main difficulty reported by respondents who had experience of conducting remote audit/inspection was maintaining satisfactory internet access. For 60% of respondents there had been difficulties for the Food Business Operator and in 37% for the official. For 26% of respondents, it was a problem for both the Food Business Operator and the official. Two respondents mentioned problems in accessing all areas of a site, for example difficulties of connectivity in chillers. Another reported excessive background noise impacting negatively (Question 33). Many respondents had needed to update or renew existing electronic (43%) or communication (59%) systems in order to carry out remote audit/inspection (Q17) which highlights the importance of this aspect.

Although multiple references were made to the difficulties associated with internet access, the spread of high-speed/5G Internet will hopefully make remote practices a less cumbersome process.

Respondents also identified difficulty in acquiring all the required information during a remote audit/inspection. Nearly half experienced difficulty with acquisition of visual information (47%) and a lack of key information was highlighted by 26%.

Approximately one quarter of respondents experienced difficulty with incompatibility of data sharing or communication platforms (Question 33, N=100).

Adaptation

For most of the respondents, the use of remote audit/inspection was a new way to deliver food controls. It was adopted largely in response to the restrictions imposed by the COVID-19 (SARS-CoV-2) pandemic, without pre-existing internationally accepted guidance or protocols and in a comparatively short time scale. Some participants (11%) were able to deliver remote audit/inspection without making any changes in their organisation, but most needed to adapt in some way (Q17). As mentioned above under Limitations, the need to update or replace communication systems was identified by the majority (59%), followed by training and capacity building for staff (54%). Training for the Food Business Operator was also carried out by 39%. One third (33%) needed to purchase new equipment. A small proportion of respondents reported the need to alter legislation or change the management, monitoring, data recording or funding in their organisation (see Figure 3). The responses to

Q 17 suggest that for the majority of respondents, apart from the issue of internet access, there were relatively few barriers to the delivery of remote audit/inspection.

Evaluation

Participants were asked if any formal evaluation on the impact of using remote audit/inspection had been carried out. The responses indicate that formal evaluation was rare (Table 3). The impact of remote practices on compliance and public health is a key issue in determining their value as a method for the delivery of official controls and this aspect should be evaluated in a controlled and formal manner.

Using remote practices instead of onsite face-to-face audits should result in resource savings for the auditor/inspector, given that travel is eliminated. There is certainly an expectation that remote audit/inspections are more resource efficient – for example, the main reason (66%) given for considering carrying out remote audit/inspection in the future by respondents who are not currently doing so was to save or better target resources (Q38). In contrast, very few respondents who have actual experience of delivering remote audit/inspection identified saving of resources as a major benefit (see Q 37 above). Six (6%) did report resource savings and this mainly related to travel time and costs. Three percent (3%) suggested that remote audit/inspection was actually more time consuming than the traditional on-site process, needing more time in the preparation stage. ISEAL (2021) support this view, claiming that remote audits require more planning and co-ordination than on site, and that remote audit preparation can take up to 30% of the total time.

Measuring the resource impact of remote audit/inspection was not one of the objectives of this research and further investigation needs to be carried out to determine the cost-benefit relationship of using remote practices.

The elimination or reduction of travel should also reduce the carbon footprint of the delivery of controls. Two participants identified reduced emissions and improved sustainability as an advantage of using remote practices. However, since the majority of respondents suggested a hybrid model would deliver the best outcome, this positive aspect of remote delivery may be limited.

The issue of resource use when carrying out remote audit/inspection needs to be researched more accurately to determine what, if any, are the advantages in resourcing

Conclusions

The main driver for carrying out remote audit/inspection were the restrictions created by the COVID-19 (SARS-CoV-2) pandemic.

The majority of the sample group who had experience of using remote audit/inspection felt that it had a role to play in food safety, especially when targeted according to risk and used as part of a hybrid model. Most felt that it could not and should not completely replace onsite audit/inspection but form part of the toolkit used by inspectors/auditors.

The lack of internationally accepted guidelines was identified as a significant gap in the delivery of remote practices such as remote audit/inspection.

The main difficulty experienced by the sample group was unsatisfactory internet access during the audit/inspection process.

Very limited formal evaluation has been carried out on the impact of remote practices on

compliance, public health, resource use or consumer acceptance.

Recommendations

Based on the survey responses, the following recommendations can be made:

- Internationally accepted guidelines on the use of remote practices in the delivery of food controls and food safety audits need to be developed.
- Any existing formal evaluations on the impact of remote practices should be published for consideration.
- Where gaps exist, further, formal, controlled evaluations should be carried out on the impact of remote delivery on compliance, public health and on the resource implications for regulators/auditors and the food industry. This will help to clarify the advantages and disadvantages of using remote practices.
- Where possible, develop standardized data sharing processes that allow cross checking or validation in a timely manner. This will contribute to the acceleration of workflows and increased confidence in the remote processes.

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Appendix 3

Q34 Thinking of the remote inspections/audits you have carried out, please could you briefly describe how these were conducted.

Comments
MS Teams, mainly document review
A set time given, the business was phoned and the connection was made, this allowed me to view the site by the phone.
Try to detect the least non compliances to avoid burden
Usually 2 components - desktop assessment of data/files requested uploaded to cloud-share platform. Interviews via MS Teams/Zoom of key technical personnel
-
1- Previous long communication with the authority and business operators (2-3 months) 2- Pre meeting for logistical arrangements, presentation of scope, goals, time frame, itinerary, etc. 3-Execution 4-Closing, reporting and follow up
1. Video conference to understand the basic situation of the enterprise. 2. Video inspection of the entire production process of the enterprise. 3. Summarize the communication inspection situation.
Upon receipt of application for the license to operate, the assigned inspector will contact the food establishment for the schedule of the inspection via online platform. The food business operator will show the actual manufacturing facility using camera, whilst the sessions are being recorded. This is done even during re-inspection to validate the corrective actions, if needed, prior to issuance of the license.
In the same way as a face-to-face audit, following the audit plan and using means such as videos or video calls to perform the visual inspection
The success relies on planning and alignment between parties. Previous meetings to confirm agenda and auditees availability. Shared folder to put the information to be reviewed per session. Each session well prepared by auditors to be efficient. Wrap up at the end of each session to conclude and highlight findings.
Virtual meeting, with information projection
Using video conference tools and exchanging emails
They are carried out through video-conference platforms in real time; it is performed in two segments, the first is the stage of verification / inspection of the production process, and immediately, the documentary verification stage is developed. All stages of the production process are inspected, questions are asked during the development of the audit and documentary evidence is requested, which are verified in real time. At the end of the audit, the audited company is asked to send complementary documentation and a margin of records, which are digitalized and sent in links or in a cloud for detailed verification, some are inspected and compared in real time and others, after the audit. The company is notified that a final audit report will be issued in less than 30 days after the inspection/audit.

Essential areas are identified- a pre-audit questionnaire is issued- the replies are assessed - where questions are still not properly answered, an attempt is made to understand the whole situation via a remote meeting
The platforms used are official for documentary checks, the importer/FBO submits documents via those platforms (I.e PHILIS), for official controls on High Risk products. When identity or physical checks are required officers will still have to access the consignment for those. The following answers on Q32, were selected as "NO", due to a none existing option for "I DONT KNOW".
It is coordinated with the auditee the modality in which the remote audit is going to be carried out, the audit plan is defined and sent in advance to be approved or adjusted by the auditee, where hours, audited areas, documents to be verified, etc. are defined. The plan defines the guidelines to carry out the audit if it is all virtual if it is in combined modality, etc.
We use Teams, can move in the facility with FBO's camera. Share docs, and ask that to send by mail.
online meetings and shared files
The inspections were conducted by partner local authorities, at the request of our organization, in which they used photographs and the inspection report.
MS Teams - visual real time inspection; sharing of electronic data; interviewing key employees and colleagues. Challenges - internet connectivity; sharing hardcopy information; unable to inspect all areas. So not a true reflection of premises standards and compliance.
Please see https://www.scoresonthedoors.org.uk/digital-inspections.php We contact a FBO with information and an invite. On the day and time we send a magic link which starts the process. All dat is purged at the end
We audit national authorities. We send official letter, agreed meetings- translation is provided. We generally used Webex platform and use only have days for audits- as they are quite intense. Some documentation is provided outside the meetings (e.g. e,ail, Dropbox). In occasions, we request video-pictures of farms- especially for animal welfare. We believe it is necessary to have an on-the-spot component for verification, but this only happens if the remote part establishes that there is a system and it can work.
Videoconferencing
gg
Varied methods and different platforms for different competent authorities
This is conducted by send a questionnaire to the food business operator to complete and return to competent authority for evaluation and decision making. May be required to also send vdeos and photographs, process flow diagram and other relevant information
They are not useful for monitoring the physical conditions of the facilities.
Through zoom platforms, with data sharing

We carry out some remote audits. We develop internal guidelines for remote audit. We have some types of remote audit but in general, below is the process: 1. Corporate will announced the factories that need to be audited remotely. 2. Scheduling remote audit. 3. Corporate will inform the documents and videos required. 4. The factory will submit the documents and videos in agreed platform. 5. Corporate team will review the documents and video submitted. 6. Carry out remote audit as per the schedule. 7. Reporting.
A meeting was scheduled, and audit program shared with the required documents before audit date, a shared folder created for the premises to load documents before the audit date. on the audit date an opening meeting is conducted with the site team.
Through digital platforms and the evidence is sent via cell phones, video call and mail.
All audits are only partially remote. First there is an onsite visit to tour the premises, observe the procedures that are in place, and interview employees. Next a remote review of records is completed.
BY ZOOM AND WITH DOUMENTAL PROVIDE BY THE FOOD INDUSTRY
NA
Usually broken down into stages, paperwork first and then a site visit if needed and possible
electronically, via mail, based on documents
Planning according to established guidelines-Disclosure of planning- Opening meeting- Connection tests-Execution of the audit-Closing meeting-Preliminary and final reports
Audit of records, haccp plans etc to minimise the need for revisits
Scheduling, organization of topics to be discussed, process verifications
For MOH Malaysia, we did remote audit during the renewal of food safety certificate, HACCP. Compliance audit still physical on site inspection.
Se envia agenda de la actividad y tiempos para cada una, se pide información preliminar como plan APPCC, concepto del Invima, plano de la empresa, entre otros
Previous information was delivered and the visual inspection was carried out with tools such as meet and teams.
Detailed audit plan and pre-audit questionnaire (queries and request for documents (legislation, procedures, data/results of controls) sent well in advance to auditee. Reply to questionnaire evaluated and follow up questions and request for additional documentation sent again to auditee. Identification and indication to auditee of areas where additional clarifications will be requested during the remote meetings. Remote meetings. Auditee presentations about areas identified, screen sharing upon auditors request of different tools/databases/docs as used/produced by the auditee, all with constant conversation auditors-auditee.
Same as INACAL GP 123
by video meetings
Zoom call to audit pre-informed subject areas of the export standard
Real-time establishment audits of livestock products from third countries with recording of the section, usually between 6 to 8 hours.

They have been carried out in an appropriate manner with the commitment of both parties, with the aim of carrying out as detailed an inspection as possible.
FBO takes video recording and still photographs of the premises requested by official in real time.
Efficient and orderly
We have had remote official inspections from many different countries and most of them were very successful. Some audit countries request that the audit is conducted by the official authority responsible for the facility. Other countries request that the person from the company, who is responsible for food safety conducts the audit.
Before the audit, documentary data is requested for the preparation of the activity. Then, in real time, a tour of the facilities is made and the process is reviewed and eventually more documentary information can be requested.
They have been carried out by means of pre-sending documents and questionnaires and live online auditing.
In general terms there are few, however I can say that the methodology has been to request all the material that is considered necessary beforehand, study it and assess in which cases it is necessary to clarify or request additional material in order to verify that the initial material is correct, these verifications or queries on doubts are given at the time of the virtual audit, it is possibly the moment that best allows to assess the veracity or confidence in the data provided. My criterion is that a trained and experienced auditor will know, based on previous information, how to ask the right questions at the time of the audit and request those elements that will allow to determine the veracity and reliability.
In general, we used remote communication for document control. Then we went on site to accompany the inspection.
In my organization, remote audits were used to conduct: International audits in FBOs (import and export), accompanied by the respective competent authority, and also in internal audits of my organization (official laboratories, departments, etc.). This new modality (remote) has not yet been used in routine during national inspections. Real time meetings where used, sharing platforms such as zoom and Microsoft Teams. Complementary documents are requested before and after the activities, as in face-to-face audits.
via online platform in the real time
First time tests have been carried out in order to check that the recording media are working properly and specific points are given to improve the inspection points.
-
Request for documents prior to the audit. Audit conducted remotely and synchronously in real time. Possibility of interface for questions during the audit and interaction with the company/authority. Main difficulty: unstable internet connection with loss of communication.
Through digital platforms in real time and through documentary, photographic and audiovisual backups, sent by the company via email.

Remote audits have been carried out by mutual agreement between the competent authorities of the countries. The audited country provides the link in order to make them platforms that can be used by the audit team.
Some data including monitoring records of food business was shared by email in advance through the government of the exporting country. A video tour of the premises was live streamed under the guidance by the auditor. The officials of the exporting country also participated.
documents are sent via a cloud such as dropbox and the production process is monitored with real-time video.
The remote inspections were conducted in real time
Video conference arranged. Prior request for key information collated via a risk assessment document which needed to be completed by the FBO. Documentation and management system run through at video conference and then a directed tour of key parts of the business- mainly (post Covid) to assess remedial actions required from a previous on site audit. Routine shadowing of process by consultancy QA staff
Using commercial platforms such as Microsoft Meet or Zoom. A tour of the company is carried out following the points of a verification report and the information must be sent in physical form by a parcel service.
detailed Audit plan to ensure the information required is available, using video platforms such as Teams or Webex, using electronic platform to share documents (including post audit video concerence) and avoid sending confidential data via E-Mail
via WebEx, participants were on different locations, from 8 in the morning to 4 in the afternoon, interviews and on-site inspection
They have been carried out as requested by the Authority of the country of destination.
-
- Priority is given to real-time inspection. - Documents and records are requested to provide evidence of the establishment's operation. -Camera movement is directed by voice instructions (inspector).
International audits take place between health authorities, and our industries receive the audit as a background. Wi-fi, sound and video tests are carried out in all areas of the industries. Specialized film crews are hired to carry out the transmission. When necessary, there is simultaneous translation. All persons participating in the audit receive the transmission equipment. International auditors have the advantage of turning off the microphones to talk to their staff, which is not uncomfortable. The fact that not many people are present at the same time during food production is essential to identify the routine of the industry and not put the product produced at risk.
1. The establishment to be audited sends a series of documents (previously agreed between the Authorities of each country), which are reviewed by the inspectors. In case of doubts, clarifications or further information are requested. 2. The visit is carried out by means of an official video call with the participation of the company / audit team / translators / authorities. 3. A closing meeting is held to present findings or observations. 4. A final report is issued containing the documentary review + virtual tour.

documentary data is requested in advance, a date is arranged for the telematic transmission, a connection test is carried out the day before, the telematic visit is carried out in real time and recorded, for subsequent review and report generation.
1. Headset delivered to the client prior to the audit. 2. Auditee trained using MS Teams to operate the headset (20 mins), wifi signals checked. 3. On the day of the audit our auditor 'dials into the headset' at the agreed time and the audit begins. Rules of confidentiality are the same as an on-site audit. The geolocation of the audit is verified using the the software platform to ensure the audit is taking place where its supposed to be. 4. Auditor interacts with the auditee during the audit while taking video footage, photos. Non conformities identified with video and photos taken and then annotated on the photo to assist both parties. 5. Some documents are viewed by the auditor during the audit, some clients create a QR code at CCPs so the documents are automatically presented when the camera in the headset picks it up. Others email them in advance of the audit or share them using MS Teams. 6. At the end of the audit the software creates a zip file containing all the video and photographic footage and notes made during the audit with any documentation. 7. Corrective actions closed out.
Remote audits have been carried out between virtual platforms such as zoom, telmex, etc. With real-time connection between the audit team, the competent authority at central and local level and company representatives. An initial meeting, audit of the establishment's process and final meeting with the competent authority and a separate meeting with the competent authority are carried out.
FBO takes video recording and still photographs of the premises requested by official in real time
The audits were conducted using communication platforms (zoom) with the participation of the country's health authority and a representative of the food industry operator in real time with a pre-agreed flow between the parties (from the dirty area to the clean area)
Customer specific standard audits were conducted on overseas businesses using Teams. Docs were uploaded and real time video used
Prior coordination has been made with the company to be inspected to ensure that the minimum technical conditions are in place. Likewise, it has been verified that the official inspectors also have technical connection conditions in order to have adequate access to the installations. Procedures and requirements previously known to the industry are applied. For the inspections carried out in this way, the same checklists used in the on-site inspections are applied and inspection reports are drawn up with the results of the activities, which may or may not be supported by audiovisual material collected during the inspection (photos or short videos). non-conformities are subsequently followed up with deadlines and the company is requested to demonstrate with audiovisual material, provided by e-mail, that these non-conformities were resolved.
By phone, video and photos, as well as submitting some documents via e-mail

The assurance scheme requires all the same standards to be verified as they are in a physical audit to ensure the requirements of ISO17065 are met. The business provides copies of all the records to a secure platform for the assessor to review prior to the remote audit. Then during the remote audit the assessor will lead the assessment and require visibility of everything they would normally see in a physical assessment. This would allow the contents of the records to be verified and the systems shown to demonstrate compliance with the standards.
Most of the times organized.
Fairly practical and recommended with committed food operators
Video calling, requesting documents by mail and visiting the site when needed
I have not conducted one.
PREVIOUS SCHEDULE ON TIME TRANSMISSION PRESENTATION ROOM WITH SHARING POSSIBILITY FOR PPT PRESENTATIONS PREVIOUS ON SITE CALL
The field inspector or the responsible official in that facility will be contacted
- Document and monitoring records provided through different method, FBO platform, emails etc -Virtual tour of premises completed using augmented reality software. This software also allow sharing of pictures and FBO recordings of areas with low connectivity. - Information used for assessment also provided by authorised officers working on sites with continue presence. (Slaughterhouses)
All field inspection procedures are applied, but through electronic platforms and with the necessary preparations for that
There is difficulty in coordinating, as well as communication problems, and time is wasted.
The establishment/laboratory is notified of the platform, date and verifying person who will carry out the inspection, that day the presentation of the personnel on both sides is carried out, the scope and objective of the visit, the documentary and technical part is carried out, the report is drawn up with the findings, if applicable, the authority sends it to the establishment, the person responsible for attending the visit and his witnesses sign it, and it is sent to the authority to finish signing it, delivering an original copy to the establishment.
The inspections usually start off with an opening meeting with the food business operator and the foreign competent authority, to put everyone on the same page on expectations and how the inspection/audit would be conducted. This would be followed by a presentation by the food business operator, a live walk through of the premises, and a review of documentation requested by us. Subsequently, a closing meeting would be held to summarise the observations and findings, and to agree on the follow ups required.
contact between the competent authorities has been made, a date and time is set, communication tests are carried out and then the audit is carried out via commonly used platforms such as Teams.
audits of the company's traceability system are carried out in the context of export certification. The audits are carried out by authorised inspection bodies and are based on an audit scheme owned by this administration. Not all types of audits (initial, maintenance, renewal, unannounced, extraordinary) covered by the scheme can be carried out remotely.

They were conducted through online platforms such as Zoom, Cisco Webex and Microsoft Teams. Recorded videos have being used, as well as live streaming.
Our remote audits of official control systems have evolved since they commenced in Sept 2020. The audit principles of course have not changed and all of the key elements in the audit process have not changed (i.e. announcement letters, audit plan, pre-audit questionnaire, objectives, scope, reporting modalities etc). We found that ½ a day was probably the most that people could bear with remote meetings. Where a physical audit on the spot may have taken 5 to 10 audit days, remote audits would normally be spread out over a longer period e.g. in one week there may only be three ½ day meetings and much more electronic transfer of documents in the intervening periods. In my own area (chemical residues in food) remote audits were spread out over a period of up to one month.
The Department of Agriculture, Water and the Environment (DAWE) has conducted remote inspections/audits for certain commodities as part of ongoing compliance and verification to meet export requirements and has participated in a few remote audits conducted by overseas competent authorities. This includes desktop assessments of documentation and photographic evidence as well as live-stream footage. These have been conducted on Microsoft Teams and where applicable, had an entry and exit meeting as per physical onsite audits to agree on audit scope and any findings identified.
A link to the software for the monitoring visit should be sent via email and then the documentation to be audited should be requested via email. For this, it is advisable to share it in a download link or cloud storage.

Appendix 4

Q37 Considering all the remote inspections/audits you have carried out, what would be your overall opinion of the use of remote inspections/audits to deliver Official Food Controls?

Comments
We consider remote audits to be very useful for assessing public health requirements in food producing establishments.
At the time of the pandemic it was the best option to prevent contagion, currently I suggest that the combined modality can be taken into account. That is to say that the virtual documentary part is reviewed and the tour to verify the condition of facilities, storage and other specific aspects if it is done in person
They are carried out as a contingency in the event of a Covid-19 pandemic. Some countries do not consider on-site inspection to be pertinent and it is then when this type of inspection is accessed for establishments that have already been previously inspected on-site on previous occasions, that is, exclusively for renovations. It is not accepted to perform audits / inspections by video conference to "first time" establishments, because it is considered that a remote verification has important limitations and it is considered an emergency methodology in this context of pandemic.
Remote audits are a good way to verify compliance for low or medium risk facilities. These must be combined with on-site audits.
The use of remote inspections/audits is one of the tools to facilitate trade and should continue to be an option for competent authorities.
There i an eccellente tools for performance inspection, when are scarce resources
They are great for reducing travel costs, optimizing auditors' time with long trips. Here is no discomfort between the parties
Remote inspection/audit is more applicable to those low risk products and/or food establishments. Given the present circumstance, the remote inspection/audit is just an alternative to the actual inspection. Right now, the agency is reverting to face to face inspection of the food establishment since movement of people are already allowed.
Useful and valid as an intervention method, should not be relied upon entirely, unannounced verification interventions should remain an option. Images and videos can often be better than being there in person. Offsite HACCP review is a huge benefit.
Most of the inspections/audits are very useful for our biosecurity procedures and to get permission to export our products to countries outside the EU.
It is not possible to assess all points in detail, the field of vision is restricted to what is shown on the screen. There are regions where the connection services are not ideal.
You can assess if there is a system but not it it works.
They have an important role given sustainability and resourcing issues. Part of a hybrid approach- more acceptable as part of efficient follow up to on site audit/inspection where there is some understanding and confidence of FBO management system

More efficient between auditor and auditee
Failure to cover the objective of an audit, on-site verification is necessary.
Some can/ should be implement going forwards as they are purely documentary or of data analysis. Premises or consignments physical checks are still very much required to confirm documentary checks, preform sampling and or organoleptic checks to certain products.
They have become a valid tool to ensure the degree of compliance of food industries and in many cases speed up the development of inspections
It is a tool in case it is impossible to carry out the activity in situ but the background information collected is less than a face-to-face audit.
Remote inspection/audit is important in the evaluation of food business operator, however it may not be adequate to guide in decision making or for approval
Audits for approval of a food premises in the national food control system (as answered in part B) and system-wide audits to assess the exporting country's system for import could be considered separately, although they may be of use in both occasions in the future. The answers above are based on our experience of the remote audits being conducted which is limited to a partial content in a specific sector. In addition, remote audits are complementary to conventional face-to-face audits in certain circumstances, rather than replacing them.
Some are ok, some require a visit
There's still a lot of work to do, in order to guarantee that the information provided is enough to evaluate food industry operators. Also, this scheme of remote work, has to be considered on national legislations, world wide, to promote it's use, and regulate its standarization.
Quite satisfactory as long as there is a stable internet network and high resolution equipment that allows a correct visualisation of the installations during the tour as well as a correct audio system that allows interaction with the company/authority.
remote audits are not fit for purpose
I consider it a great alternative, provided that all institutions are trained. It is also important to have supporting legislation and necessary equipment available.
In the face of the pandemic and with travel restrictions, technology has made it possible to access and conduct audits that previously could only be done in person.
Remote exercises are effective and efficient only in rare cases, it's impossible to see the WHOLE picture remotely
It is an alternative to take into account because it makes it possible to carry out inspections at sites that were not possible due to their location and to review aspects of importance to the company in real time.
We are not saying that it replicates and on site visit but for low risk businesses and those we have confidence in this has worked well for my team. We have also used it for animal licensing and beauty licensing as well.
-
Work well for low risk

An on-site verification part remains necessary in most cases
The restrictions created by the covid19 pandemic have highlighted using remote techniques and encouraged CA and private companies to reconsider operational practices. It's a challenge for continuous routine work.
Useful as one more tool. Enough by itself for some specific types of audits/subjects/auditees. Require much more upfront preparation and time investment from both sides in order to make effective use of the allocated time. Remote meeting time (so with both auditor and auditee "present") gives much less information/output than the same amount of time physically in the same room. Conclusion: they can sometimes replace fully an on-the-spot audit with significant savings in travel related expenses/resources. For that to be achieved and be effective it MUST be supported by a much higher time investment before the remote audit.
Very useful for the initial steps- avoid use of resources when system not yet ready. They also allow to cover areas which will never be a priority for sending auditors on-site (small and remote exporters, for instance)
Remote audit is suitable in some limited circumstances, and is better to no audit activity, but in the majority of cases does not result the the same quality of audit compared to a physical on-site audit
It can help to reduce need of recources but have lot of limitations. We have to combine onsite visits with remote ones.
It is a very useful tool and should be promoted and regulated.
It is essential that the competent authorities of the audited countries are reliable, a large part of this type of audits should be focused on the capacities of these authorities to maintain controls and not necessarily on the individual performance of each establishment.
No substitute for a real face to face inspection. OK for gathering and sharing electronic information. Only suitable for organisations with effective internet connectivity and appropriate workspace for real-time collaboration and communication.
I think it is a useful tool in case of movement restrictions as it is in COVID-19, however, I believe that the face-to-face audit is irreplaceable.
The restrictions created by the covid-19 pandemic have highlighted using remote techniques and encouraged CA and private companies to reconsider operational practices. It's a challenge for continuous routine work.
I consider it necessary to train the official personnel in the handling of the platforms used, in order to efficiently and effectively carry out an inspection, using all the tools that may be necessary or help to make the most of the time in which the inspections are carried out.
They have a place but the staff we spoke to did not like them and if the wifi signal is poor then the connection is very poor.
The use of remote inspections/audits has been acceptable considering the global situation by covid-19. However, this methodology is by no means a substitute for a face-to-face inspection.
We see the positive of having an additional tool (remote inspection) that is used as needed and based on an assessment of the risks and available resources for each party.

Pandemic forced us to think in non-conventional ways to maintain control in our food safety program. Although remote audit cannot replace physical site audit/inspection and remote audit has some difficulties, I consider that it still can be effective and can capture critical findings through video observation, live walkthroughs, utilizing video calls and document review. Remote audit which review on documentation and picture/video tent to catch more on system issue such as flaws in self inspection, HACCP, IPM, etc. Good and thorough remote audit is not less valuable than onsite audit/inspection.
It can be used solely for documentation check
They are useful in cases where face-to-face inspection is not available.
Few remote audits have been carried out, but may be hampered by time constraints of the auditee (due to costs of hiring services for camera management to achieve a better image during the audit), access or internet failures on the part of the auditee or the auditor. There are conditions in the facilities or processes that cannot be assessed remotely.
practical
Not suitable
They must be risk based
In my opinion, remote inspection is part of food control operations and must be preceded and followed by complementary measures.
Not suitable for all facilities
It is a good instrument when properly planned and connected.
I think it is a good tool
They provide prompt information
They allow for a detailed evaluation of what has been observed and a visual record in the visual report as well as cost savings for the state.
I believe for food control it is more effective to have on site representation for better coverage and control
it has pros and cons that have to be evaluated according to the risk and the adequate level of protection of each product and each country and each stage of the processes, it can be one more tool but not the only one used, as it has certain disadvantages that have to be worked out in other ways.
remote inspections/audits are useful as an additional tool to control establishments, but are not sufficient on their own to ensure proper control.
They are useful as long as certain conditions are met, such as: availability of background information and previous documentation, internet access, adequate audiovisual tools to capture images, conduct interviews and access the entire installation. It is useful as a complementary way to face-to-face inspections.
Limited in real safety evaluation, as you are not observing what actually goes on
While it is a very practical tool for the continuation of inspections, sometimes internet connections do not allow viewing of certain areas, requiring non-real-time video recordings. This makes it impossible to request a re-recording or to show something specific.
-

Basically,It can effectively evaluate and review the food safety management system and food safety status of overseas countries (regions), and determine the corresponding inspection and quarantine requirements according to the evaluation and review results.
The accelerated development and utilisation of alternative verifications tools (i.e., remote audit inspection and assurance) has been beneficial in supporting food supply chains throughout the COVID-19 pandemic. The ability to use these tools will provide more flexibility or regulators as an ongoing element of a modern regulatory toolkit, and regulated entities in a post-pandemic world. Whilst there are opportunities for reduction of cost within regulatory frameworks by using these tools, there is also recognition that alternative verification does not replace on-site audits and consideration should be given to which tool will provide the intended outcomes of the specified activity.
Remote audits are useful in very specific circumstances, to support the audit programme, however, they shouldn't be seen as a full replacement for on site audits.
Upon substantial review following relaxation of COVID travel restrictions, it was our conclusion that while these measures were adequate, they were not a direct substitute for in-person audits. They were significantly more time consuming for both parties and required a great deal more preparation. Food businesses that were typically good performers did not like them and felt they lacked the depth of a traditional audit.
IT IS A GREAT TOOL
Not suitable, there is difficulty in coordination and also problems with communication and time is wasted.
the necessary minimum
With proper regulation it can be a useful tool. Improvements can be implemented. We have not yet used this new methodology for inspections, continuing to carry out these in situ. For international audits and internal audits, it proved to be useful and functional, as there is adequate motivation by all parties involved.
Many meetings should be held in which first the official regulations and their records are known according to the inspection, regulation and control structure, in order to be analysed and then verified during the remote audit but the drawback is that only hyper short periods are reviewed due to the recording times and it does not allow for more exchange in case of doubts or for clarifications.
Neither questions 8, 9, 23, 24, 25, 34 and 35 are appropriate for us to answer (they are really for a competent authority). I have ticked a box in each because it is not possible to complete the survey without doing so. Our experience of remote systems auditing has been quite positive though it has not been without its problems (IT and interpretation-related) and it lacks 'real world verification' of the effectiveness of official controls- one reason why we have moved to a hybrid model where the on-site component of the audit is focussed very much on this aspect and thus we spend fewer days on the ground in the country. I cannot speak for the efficacy of remote INSPECTIONS of food business operators. Those competent authorities who have implemented such inspections are much better placed to answer that question.
Very positive to reduce travelling and improve time/cost efficiency. However, could never substitute onsite verification of the implementation of measures, SOP or WI.

they should be considered an additional tool available for use under certain circumstances or situations and their use be appropriate for the food businesses and the purpose of the audit or verification. They use will be appropriate in some situations but not across the board in all situations for all businesses
That they are good and should be maintained, taking into account that aspects such as labeling and documentary checks work well from a distance.
is used for documentary auditing. It is not as reliable for observing the production process.
Very little experience in this area, we have done remote audits only in the context of covid to limit contacts and travel. The office audits were done remotely and the witness audits were done on site. This way of doing things seems to me to be efficient.
It is a system that requires further development to define the audit criteria and to cover the different areas, but it should not always be the only method for defining audits, but should be combined with on-site audits, which are not replaceable.
I agree that these types of audits will be carried out
Extremely limited, deficient. Only useful for checking point structures and/or verifying corrections.
Not official food controls- voluntary standards and customer specific perhaps
It can be done if the basic criteria can be accepted for both parties.
The exercises of on-site inspections are more enriching
good opportunity in the future
I do not believe in the use of remote audits to replace official controls as they are not accurate means of assessing compliance. However as a follow up to inspections to check on compliance measures such as food safety management systems, photos of individual items requiring improvement etc they can help to reduce revisits.
It is complex due to several aspects, such as language barrier, timetable changes, unstable connection, which makes communication interaction difficult.
The preparation is very time and resources consuming, thy take longer than on-site audits (to gather all information required)
Remote auditing, although helpful in some respects, tends to become more complex due to issues of speed and stability of internet connection. It is not possible to use other senses such as smell, which is fundamental in the approval of products fit for human consumption. Although the camera is directed verbally, it is only possible to observe panning of the area. For the first authorisation of an establishment or to verify the maintenance of an establishment, physical visits are necessary for the inspector to be able to better evaluate the establishment. This tool can be used to clarify doubts or as a working instance between both parties.
They are proven to be robust and have picked up significant non-compliances. We believe they have a role to play as part of a combination of inspection processes to demonstrate robust compliance with assurance standards.
good tool for contingency situations, but would not replace face-to-face meetings
Partially effective

Remote audits and inspections provide a hybrid solution that enables efficiency, agility at reduce cost. It can be effectively used to drive risk based inspections. From our experience remote auditors need special training to really use their powers of observation because experience shows auditees have on occasion tried to 'game' the system with false walls and doors. Remote audits will not replace a F2F audit but can be used in a blended approach. They are most effective when its unannounced or semi-unannounced. The last point is because the technology- particularly the hardware- is improving all the time so its more cost effective to hire or lease equipment than buy it outright and it be quickly outdated.

Partially remote audits are acceptable.

Should only be conducted if a business has a complaint history with the competent authority

FUTURE

I have not carried out a remote audit

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