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Meeting report

One Health approach to food safety risk communication manual for veterinary and public health workers in Southeast Asia

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Introduction to the One Health approach to food safety risk communications

One Health is a collaborative, multisectoral, and transdisciplinary approach - working at the local, regional, national, and global levels - with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.

One Health approach is particularly relevant for food and water safety, nutrition, the control of zoonoses, pollution management, climate change and combatting antimicrobial resistance.

Food safety is a critical concern in Southeast Asia due to the region's diverse food production systems, cultural practices, and increasing global food trade. Effective communication of food safety risks helps protect public health, improves food security, and maintains consumer confidence.

Risk communication is a key element of risk analysis, alongside risk assessment and risk management. It involves sharing information about food safety hazards and risks between stakeholders, including policymakers, public health workers, veterinarians, producers, and the public. Effective communication builds trust, supports informed decision-making, and encourages behavior change to reduce food safety risks.

Importance of risk communications in food safety

- **Prevention of foodborne diseases**: Risk communication enables the dissemination of information regarding foodborne pathogens, chemical contaminants, and unsafe food practices, helping to prevent outbreaks.
- **Building public trust**: Transparent and timely communication from veterinary and public health workers builds trust in food safety systems and ensures compliance with food safety regulations.
- **Collaboration across sectors**: The One Health approach emphasizes collaboration between veterinary, public health, and environmental sectors to address food safety holistically. Coordinated communication is vital in this multidisciplinary context.

Key principles of risk communications

- **Transparency**: Share information openly about food safety risks, including what is known, what is uncertain, and what actions are being taken to manage the risks.
- **Timeliness**: Provide information as soon as possible, especially during food safety incidents, to enable quick responses and minimize harm.
- **Accuracy**: Ensure all communications are scientifically sound and free from misinformation.
- **Tailoring messages**: Adjust communication strategies to the audience's level of understanding, cultural context, and language preferences to ensure the message is effective.
- **Engagement**: Foster two-way communication by actively listening to concerns from the public and stakeholders and addressing them appropriately.

Risk communication strategies

Audience identification

Identify key audiences that require tailored communication approaches:

- **Consumers**: Educate on safe food handling, preparation, and consumption practices.
- **Producers and processors**: Inform them about food safety regulations, Good Agricultural Practices (GAP), and Good Manufacturing Practices (GMP) to prevent contamination at the source.
- **Policymakers and regulatory agencies**: Ensure that decision-makers understand the risks to shape effective food safety policies.
- **Media**: Collaborate with media outlets to disseminate accurate information during food safety incidents.

Message development

Effective food safety messages should:

- **Be clear and concise**: Avoid technical jargon and ensure messages are easy to understand.
- **Highlight the risks and solutions**: Clearly explain the food safety risks and provide practical advice to mitigate them.
- **Be culturally appropriate**: Consider local dietary practices, beliefs, and languages when crafting messages.

Communication channels

Use multiple communication channels to reach a broad audience:

- **Mass media (TV, radio, newspapers)**: Useful for reaching the general population, particularly during outbreaks.
- **Social media platforms**: Effective for rapid communication, especially to younger audiences.
- **Workshops and training**: Provide in-depth information to professionals in agriculture, veterinary services, and public health.
- **Printed materials**: Flyers, posters, and brochures can reinforce messages at markets, health centers, and veterinary offices.

Addressing challenges in food safety risk communications

- **Misinformation and rumors**: Addressing misinformation promptly through reliable sources helps prevent panic and confusion during food safety incidents.
- **Cultural and linguistic diversity**: Southeast Asia is a culturally diverse region, so risk communication must be adapted to local languages and customs to be effective.
- **Limited resources**: Public health and veterinary agencies in some areas may lack resources for extensive communication campaigns. Partnerships with local media, community leaders, and NGOs can help bridge this gap.

Practical steps for implementing food safety risk communications

Establishing a risk communication framework

To effectively implement risk communication strategies, veterinary and public health workers need a structured approach. This framework involves the following steps:

Step 1: Risk identification and assessment

- Identify potential food safety hazards, such as microbial contamination, chemical residues, or environmental toxins.
- Assess the level of risk posed by these hazards using scientific data and field reports.

Step 2: Message development and planning

- Develop key messages based on the risk assessment.
- Ensure messages address the "what," "why," "how," and "what's next" of the identified risk.
    - *What* is the risk (e.g., foodborne pathogens, chemical contamination)?
    - *Why* is it important (impact on public health, economic loss)?
    - *How* can the risk be mitigated (safe practices, regulations)?
    - *What's next* (expected actions by producers, consumers, policymakers)?

Step 3: Identify stakeholders and target audiences

- Engage with stakeholders at all levels of the food chain, including farmers, food processors, retailers, and consumers.
- For each audience, tailor messages that are specific to their role in food safety. For example, technical advice for producers on Good Agricultural Practices (GAP) may differ from consumer education on safe food handling practices.

Step 4: Selecting communication channels

- Use a mix of communication channels such as mass media, community outreach programs, and digital platforms, depending on the audience and resources available.
- Ensure materials are translated into local languages and respect cultural sensitivities.

Step 5: Monitoring and feedback

- Once messages have been disseminated, collect feedback to gauge the effectiveness of communication efforts.
- Use surveys, focus groups, or media monitoring to assess whether key messages are being understood and whether behaviors are changing as intended.

Handling food safety crises: An emergency risk communication plan

During food safety emergencies, such as disease outbreaks or food contamination incidents, communication efforts need to be accelerated to minimize public health risks. Emergency risk communication involves:

Rapid response teams:

- Form teams of veterinary and public health officials who can quickly mobilize to respond to food safety crises. These teams should be trained in risk communication and have access to up-to-date information.

Real-time data sharing:

- Ensure that risk communication teams have access to real-time data from laboratories, epidemiological investigations, and food safety monitoring systems. This allows for quick identification of the source of contamination or outbreak and speeds up the development of targeted communication strategies.

Consistent messaging:

- Avoid conflicting messages by establishing clear lines of communication between different agencies and stakeholders involved in the response. This ensures that the public receives accurate, consistent information from trusted sources.

Transparency and trust:

- Even during crises, maintain transparency by openly discussing what is known about the risk, what actions are being taken, and any areas of uncertainty. Transparency fosters trust between authorities and the public.

Correcting misinformation:

- Misinformation can spread rapidly during food safety incidents, particularly on social media. Set up systems to monitor for false information and provide timely corrections.

Special considerations for Southeast Asia

The Southeast Asian region presents unique challenges and opportunities for food safety risk communication due to its diversity in culture, agriculture, and food consumption habits.

Cultural sensitivities

- Food is deeply tied to cultural identity in Southeast Asia, with local dishes and food practices varying widely across the region. Risk communication should respect these cultural differences and avoid suggesting that traditional food practices are unsafe without scientific justification. Instead, emphasize ways to maintain safety while honoring tradition.

Linguistic diversity

- With multiple languages and dialects spoken across Southeast Asia, messages must be delivered in local languages to ensure inclusivity and comprehension. Utilizing local media outlets and community leaders who speak the local dialects can increase the reach and effectiveness of risk communication efforts.

Role of informal food markets

- Informal food markets are a major source of food for many people in Southeast Asia, but they often operate outside formal regulatory systems. Risk communication strategies should focus on educating vendors and consumers in these markets about basic food

hygiene and safety practices. Engaging local market authorities and community groups in communication efforts can lead to broader impact.

Cross-border collaboration

- Many food safety issues in Southeast Asia, such as the spread of animal-borne diseases and food trade, transcend national borders. Cross-border communication and collaboration between countries in the region are essential for addressing transboundary food safety risks. Regional organizations such as the Association of Southeast Asian Nations (ASEAN) can play a key role in fostering cooperation.

Capacity building and training for risk communications

To effectively communicate food safety risks, it is essential that veterinary and public health workers receive adequate training. Capacity building in risk communication can be integrated into the following areas:

Technical training

- Provide training on the scientific aspects of food safety, including hazard identification, risk assessment, and disease surveillance. This helps communicators better understand the risks they are discussing with the public.

Communication skills

- Develop communication skills through workshops on public speaking, message development, and the use of media tools. Emphasize how to simplify complex scientific information without losing accuracy.

Crisis communication preparedness

- Conduct drills and simulations to prepare risk communicators for handling food safety emergencies. These exercises should focus on quick decision-making, coordination with other agencies, and engaging the media.

Role of technology in enhancing food safety risk communications

As technology becomes more integrated into everyday life, it presents new opportunities to improve food safety risk communication. Leveraging modern tools can enhance both the speed and reach of risk communication efforts across Southeast Asia.

Mobile applications and SMS alerts

With the widespread use of smartphones across the region, mobile applications can be an effective way to disseminate real-time food safety information. Mobile apps can:

- **Issue alerts** on foodborne illness outbreaks or contaminated food products.
- **Provide educational resources** on safe food handling, preparation, and storage practices.

- **Allow two-way communication** between public health authorities and the public, enabling quick reporting of suspected food safety incidents.

For populations with limited internet access, SMS (short message service) alerts offer a low-cost way to deliver crucial information, particularly during emergencies. National food safety authorities and public health organizations can partner with telecommunications companies to send SMS messages about food recalls or disease outbreaks.

Social media and digital platforms

Social media platforms like Facebook, Twitter, and WhatsApp are widely used in Southeast Asia, making them key channels for food safety risk communication. Public health authorities can use these platforms to:

- **Share timely updates** on food safety risks, foodborne disease outbreaks, and prevention strategies.
- **Engage with the public** by addressing questions, correcting misinformation, and promoting food safety campaigns.
- **Target specific audiences** with tailored messages using tools like demographic filters or language settings on social platforms.

Additionally, digital platforms like websites and blogs can host food safety guidelines, FAQs, and multimedia resources such as videos or infographics. These platforms allow for more in-depth educational materials compared to social media posts.

Data analytics and risk mapping

Technology also enables the use of data analytics to improve food safety risk communication strategies. By analyzing data from various sources—such as food production reports, epidemiological data, and consumer feedback—public health authorities can:

- **Identify trends and hotspots**: By mapping regions where foodborne illnesses or food safety risks are more prevalent, authorities can target those areas with focused communication efforts.
- **Evaluate communication effectiveness**: Using data analytics, agencies can assess which communication methods are most effective, allowing them to refine strategies over time.
- **Predict and prevent future risks**: Big data can help identify early warning signs of food safety risks, such as emerging pathogens or unsafe agricultural practices, enabling proactive communication.

Engaging the media in food safety risk communications

The media plays a vital role in informing the public about food safety risks. Veterinary and public health workers should actively collaborate with media outlets to ensure accurate and timely dissemination of food safety information.

Building Relationships with Journalists

Veterinary and public health authorities should cultivate positive relationships with journalists and media organizations. Key actions include:

- **Providing media briefings**: Regularly brief journalists on emerging food safety issues, ensuring they have access to the latest, scientifically accurate information.
- **Offer training**: Help journalists understand the complexities of food safety risks, so they can report on the issue responsibly and avoid sensationalizing stories.
- **Designating spokespersons**: Appoint trained spokespersons who can clearly communicate key messages to the media during food safety incidents.

Managing media relations during crises

During food safety crises, such as an outbreak or contamination event, the media will often seek rapid updates. Public health officials should have a media response plan in place that includes:

- **Consistent messaging**: Ensure that all spokespersons provide consistent and accurate information to avoid public confusion.
- **Timely updates**: Provide regular updates to the media, even if new developments are slow. Keeping the media informed builds trust and prevents rumors from spreading.
- **Correcting misinformation**: If incorrect information is reported, respond quickly to correct it, either by issuing a statement or reaching out directly to the media outlet in question.

Role of public engagement in risk communications

Public engagement is essential for ensuring that food safety messages are not only heard but also acted upon. Encouraging active participation and fostering trust are key components of successful risk communication.

Participatory approaches

Involving the public in food safety initiatives enhances the impact of communication efforts. Strategies to encourage participation include:

- **Community consultations**: Engage local communities in discussions about food safety risks and solutions. This helps build trust and ensures that communication efforts are grounded in local realities.
- **Feedback mechanisms**: Allow the public to provide feedback on food safety initiatives through surveys, focus groups, or social media interactions. This feedback can guide future communication efforts and ensure that messages resonate with target audiences.
- **Empowering consumers**: Teach consumers how to take control of their own food safety by providing practical advice on safe food handling, food purchasing choices, and how to identify credible sources of information.

Addressing public concerns

In many cases, the public may have concerns or fears that need to be addressed. For example, in the wake of a foodborne illness outbreak, people may be uncertain about which foods are safe to consume. Veterinary and public health workers can address these concerns by:

- **Acknowledging fears**: It is important to recognize that the public's concerns are valid. Risk communication should reassure people without dismissing their worries.
- **Providing clear guidance**: Give specific, actionable advice on how people can protect themselves and their families from food safety risks.
- **Correcting misinformation**: Misinformation can spread rapidly, especially during a crisis. Providing accurate information in a timely manner helps dispel myths and prevent panic.

Monitoring and evaluation of risl communications efforts

Monitoring and evaluation (M&E) are essential for assessing the effectiveness of food safety risk communication strategies and ensuring continuous improvement. M&E provides insights into how well communication messages reach target audiences, how behaviors are changing, and where gaps remain.

Developing indicators for success

To measure the impact of food safety risk communication efforts, veterinary and public health workers should develop clear indicators that align with their communication goals. Several KPIs can be used to measure the success of risk communication efforts:

- **Reach**: How many people have been exposed to the food safety messages? This can be measured through media analytics, social media engagement, or attendance at community events.
- **Behavioral change**: Are people adopting safer food practices after being exposed to risk communication efforts? Surveys, focus groups, and observational studies can help assess whether food safety behaviors are improving.
- **Public awareness and trust**: Has public knowledge of food safety risks increased? Do people trust the information being provided? Public opinion surveys can measure shifts in awareness and trust over time.
- **Incident response**: The speed and effectiveness of public response during foodborne illness outbreaks or recalls, including the number of people who follow official instructions to avoid contaminated products.

Continuous Improvement through Feedback Loops

Collecting feedback from the public and key stakeholders ensures that risk communication strategies remain relevant and effective. Veterinary and public health workers should establish mechanisms to gather input from consumers, food businesses, and community leaders to refine their messaging.

- **Public surveys**: Conducting regular surveys on food safety knowledge and behavior helps identify areas where communication efforts are succeeding and where they need improvement.
- **Stakeholder workshops**: Engaging food producers, vendors, and health workers in workshops and roundtable discussions allows for two-way communication, ensuring that food safety messages resonate with those responsible for food handling.

Continuous improvement

Risk communication strategies should evolve based on lessons learned from previous efforts. By regularly reviewing the data collected through monitoring and evaluation, public health authorities can:

- **Refine messages**: If certain messages are not resonating with target audiences, they can be revised to improve clarity and relevance.
- **Adapt channels**: If specific communication channels are proving more effective than others, resources can be redirected accordingly.
- **Respond to new risks**: Food safety risks are dynamic, and new hazards can emerge over time. Continuous monitoring ensures that risk communication strategies stay relevant.

Case study for food safety risk communications

Understanding how food safety risk communication has been applied in real-world scenarios can provide valuable lessons for veterinary and public health workers. The following case studies highlight successful risk communication efforts in Southeast Asia, showcasing different approaches to managing food safety risks.

Case Study 1: Avian influenza outbreak in Vietnam (2014)

In 2014, Vietnam experienced an outbreak of avian influenza (H5N1), raising concerns about food safety and public health. To mitigate the risk, the government of Vietnam, in collaboration with international organizations such as FAO and WHO, launched a comprehensive risk communication campaign focused on both human and animal health.

Key elements of the campaign included:

- **Targeted messaging**: Separate messages were developed for poultry farmers, market vendors, and consumers. Farmers were advised on biosecurity measures such as keeping poultry away from water sources frequented by wild birds. Vendors were educated on proper handling and selling of poultry, while consumers were informed about safe cooking practices to avoid infection.
- **Use of local media**: Television and radio were widely used, with messages delivered in local languages. Community leaders and veterinarians were engaged to serve as spokespersons, ensuring messages were culturally appropriate and trusted by local populations.
- **Engagement with rural communities**: Since many rural communities relied on poultry for their livelihoods, the risk communication strategy involved direct engagement through village meetings and farmer cooperatives. Veterinarians and public health workers visited villages to provide training on recognizing signs of avian influenza and reporting suspected cases.
- **Evaluation and adjustment**: Continuous monitoring of the campaign revealed high levels of compliance with recommended practices among farmers. Adjustments were made to further emphasize consumer food safety, particularly in urban markets.

This case study demonstrates the importance of a multi-stakeholder approach, tailored messaging, and on-the-ground engagement in managing food safety risks during a zoonotic disease outbreak.

Case Study 2: Reducing chemical residues in Thai agricultural products (2018)

Thailand faced a growing concern about chemical residues in fruits and vegetables due to excessive pesticide use. The government responded by implementing the "Safe Vegetable and Fruit" campaign, which aimed to reduce chemical contamination and increase public awareness of food safety.

The key components of the risk communication strategy were:

- **Farmer education**: Agricultural extension officers were trained to educate farmers on integrated pest management (IPM) techniques, reducing the need for chemical pesticides. Workshops and demonstrations were held at community levels, allowing farmers to learn and adopt safer agricultural practices.
- **Retailer and consumer engagement**: Large retailers, such as supermarket chains, were enlisted to promote produce certified as safe and free of harmful pesticide residues. Consumers were informed through product labeling and in-store displays, promoting awareness of safe choices.
- **Public campaigns and social media**: A public campaign was launched through television, print, and social media. The government collaborated with food safety advocates and NGOs to amplify the message, using slogans like “Eat Safe, Eat Smart.” Social media influencers also played a role in reaching younger, urban populations.
- **Monitoring and feedback**: The Thai Food and Drug Administration (FDA) monitored pesticide residue levels in produce and regular updates were provided to the public. This transparency built trust and encouraged compliance with safer farming practices.

The success of the campaign was evident in the reduction of pesticide residues in agricultural products and increased consumer demand for certified safe produce. This case highlights the role of cross-sector collaboration, public-private partnerships, and consumer education in addressing food safety concerns.

Case Study 3: Response to pork contamination in the Philippines (2019)

In 2019, the Philippines faced a food safety crisis when pork products were found to be contaminated with African swine fever (ASF), threatening the pork industry and public health. The Department of Agriculture (DA) led a risk communication campaign to control the spread of ASF and restore public confidence in pork products.

Key strategies included:

- **Clear and consistent messaging**: The DA worked with local government units (LGUs) to ensure that messages about ASF were consistent across the country. Clear information was provided on how ASF affected pigs and posed no direct threat to human health, emphasizing that properly cooked pork was safe to eat.
- **Engagement with pork producers**: Veterinarians and agricultural officers visited pig farms to educate producers on biosecurity measures. Farmers were encouraged to report any signs of illness in their herds, and those affected by ASF were offered financial compensation to ensure compliance with culling protocols.

- **Social media campaigns**: The DA leveraged social media to combat misinformation, which had led to widespread fear of consuming pork. The campaign used the hashtag #SafePorkPH to reassure consumers, and videos featuring well-known chefs, demonstrating how to safely prepare pork, went viral.
- **Cross-border communication**: Given the potential for ASF to spread across national borders, the Philippines collaborated with neighboring countries to share information on containment efforts and best practices.

Despite the challenges posed by ASF, the Philippines' risk communication campaign successfully mitigated panic and helped control the spread of the disease, underscoring the importance of timely, accurate, and transparent communication during food safety crises.

Case Study 4: Foodborne disease surveillance and risk communication in Malaysia (2020)

In 2020, Malaysia's Ministry of Health launched an initiative to strengthen foodborne disease surveillance and communication efforts in response to an uptick in food poisoning cases in schools and food stalls. The goal was to improve public awareness of foodborne illnesses and to prompt better hygiene practices among food vendors and consumers.

Key components of the risk communication strategy:

- **Food safety campaign in schools**: Recognizing that many cases involved school canteens, the Ministry targeted school administrators, parents, and food vendors through educational workshops on food hygiene and proper handling of raw ingredients. Educational materials were distributed to students, encouraging them to be more vigilant about hygiene when consuming food from canteens or vendors.
- **Digital reporting system**: A mobile app was developed to allow citizens to report cases of foodborne illness directly to health authorities. This real-time data helped health workers identify hotspots and react quickly to emerging threats. Risk communication around the app's launch emphasized the importance of community involvement in preventing foodborne illness outbreaks.
- **Media engagement and public alerts**: Malaysia leveraged both traditional media (TV, newspapers) and social media platforms to disseminate information about specific outbreaks, proper food preparation methods, and the health risks of foodborne pathogens. When cases of contamination were detected in local markets, immediate alerts were issued to prevent the public from consuming unsafe products.
- **Food vendor training and certification**: The Ministry mandated that food vendors complete a training program on hygiene and food safety, with successful participants receiving a certificate. This certification was displayed at stalls to reassure consumers about the safety standards being followed.

The strategy resulted in a significant reduction in foodborne illness cases in schools, highlighting the importance of engaging key stakeholders (vendors, parents, and students) and utilizing digital platforms to enhance public reporting and awareness.

Case Study 5: Dairy safety communication in Myanmar (2016)

In 2016, Myanmar faced concerns over the safety of its rapidly growing dairy industry. Reports surfaced of contamination issues due to poor handling practices, prompting the Ministry of Agriculture, Livestock, and Irrigation to implement a risk communication campaign to safeguard public health and support the local dairy industry.

Key strategies:

- **Public awareness on raw milk consumption**: Many rural populations consumed raw milk, unaware of the health risks. The government, alongside international partners like FAO, launched a public health campaign educating consumers on the dangers of consuming unpasteurized milk and promoting the benefits of boiling or pasteurizing milk at home.
- **Engagement with dairy farmers**: Farmers were trained in proper milking practices, sanitation, and storage techniques. Workshops were held in rural dairy-producing regions, with a focus on minimizing contamination risks from equipment and animal health. A farmer-to-farmer learning model was encouraged where experienced dairy producers demonstrated best practices to peers.
- **Promotion of safe dairy products**: The government worked with local dairy cooperatives to promote certified, safe dairy products in markets. Risk communication efforts highlighted the differences between raw and pasteurized products, emphasizing that properly handled and certified dairy items were safer for consumers.
- **Radio and print campaigns**: Given the limited access to the internet in rural areas, radio programs were used to disseminate key food safety messages. Print materials, including posters and pamphlets, were distributed in local markets, explaining how to safely handle and store dairy products.

This campaign helped increase consumer knowledge about the risks of raw milk and improved hygiene standards among dairy farmers, leading to safer dairy products entering local markets.

Case Study 6: Combating *Salmonella* in chicken in Cambodia (2017)

In 2017, Cambodia launched a targeted campaign to combat Salmonella contamination in poultry, a major public health concern due to its high incidence in local wet markets. The Ministry of Health and Ministry of Agriculture, Forestry, and Fisheries collaborated to address food safety at various points along the poultry supply chain.

Key elements of the risk communication strategy:

- **Vendor training in wet markets**: Poultry vendors in wet markets were trained on hygienic practices, including cleaning and sanitizing surfaces, proper poultry handling, and separating raw meat from other food products. Risk communication materials, such as posters and brochures, were provided to vendors to reinforce good practices.
- **Consumer education on safe cooking**: Public health messages targeted consumers, especially those purchasing poultry in local markets. Messaging focused on the importance of thoroughly cooking chicken and using separate utensils for raw and cooked meat to prevent cross-contamination. Street campaigns and cooking demonstrations were organized in key urban areas.
- **Radio and television campaigns**: Cambodia's risk communication campaign also utilized mass media, including radio and television, to raise awareness about Salmonella risks. Public service announcements aired during peak shopping times, reminding consumers of the dangers of improper food handling and the importance of safe cooking methods.
- **School programs**: In collaboration with educational authorities, the campaign expanded into schools, where children were taught about food safety through

interactive activities and lessons on kitchen hygiene. The idea was to make children agents of change by encouraging them to practice and promote food safety at home.

This multi-pronged approach led to a reduction in Salmonella cases linked to poultry consumption, demonstrating how risk communication can be effectively tailored to different segments of the population, including vendors, consumers, and even schoolchildren.

Case Study 7: Fish safety in Indonesia's coastal communities (2018)

In 2018, Indonesia faced concerns about the safety of fish products in coastal communities, particularly due to contamination from pollution and improper fish handling. The Ministry of Marine Affairs and Fisheries implemented a risk communication strategy focused on ensuring the safety of fish consumed both locally and exported abroad.

Key aspects of the risk communication strategy:

- **Fishing practices and safety**: Fishermen were educated on safe fishing practices, with an emphasis on avoiding polluted waters and minimizing post-catch contamination. Training sessions were held at fishing villages, and educational materials were provided to improve fish handling and storage.
- **Consumer awareness campaign**: A public campaign was launched to raise awareness about the importance of purchasing fish from certified vendors who follow hygiene protocols. Communication materials encouraged consumers to look for quality indicators like clear eyes and firm flesh when selecting fresh fish.
- **Engagement with exporters**: For fish exported internationally, the government worked closely with fish processing companies to ensure compliance with international food safety standards. Risk communication around the economic benefits of maintaining high food safety standards was used to encourage compliance among processors and exporters.
- **Radio programs and community engagement**: Since many coastal communities rely on radio for news and information, radio programs were tailored to fishermen and local markets, educating them about best practices in fish safety. Community-based outreach efforts involved local leaders and fishermen cooperatives, ensuring that messages were culturally relevant and widely disseminated.

The initiative led to improvements in both domestic and export markets for fish, with contamination risks reduced through better handling and awareness practices. This case underscores the importance of addressing the entire supply chain in food safety risk communication, from production to consumption.

Lessons learned from case studies

The success of these food safety risk communication efforts highlights several key principles that can be applied to similar challenges across Southeast Asia:

- **Tailored communication for specific audiences**: Whether targeting consumers, vendors, or producers, the most effective communication strategies address the unique needs and practices of each group. This ensures that messages resonate and result in behavior change.
- **Multi-channel approach**: Using a combination of digital tools, traditional media, and on-the-ground engagement increases the reach and impact of food safety

communication. Rural and urban populations often require different communication channels for maximum effectiveness.

- **Building trust through transparency**: Trust is key in any risk communication effort. Regular, transparent updates about food safety issues and solutions - whether through official channels or community leaders - helps build confidence in the safety of the food supply.
- **Collaboration and partnerships**: Cross-sector collaboration, including partnerships between government agencies, private sector stakeholders, and community organizations, enhances the effectiveness of food safety risk communication efforts.

Recommendations for enhancing food safety risk communications

Based on the lessons learned from these case studies and best practices in risk communication, the following recommendations can help improve food safety communication efforts in Southeast Asia:

Strengthen multi-sectoral collaboration

Food safety risk communication is most effective when it involves collaboration across different sectors, including health, agriculture, trade, and education. Veterinary and public health workers should:

- Foster partnerships between government agencies, private industry, and civil society to create a unified message and strategy.
- Engage regional bodies, such as ASEAN, to facilitate cross-border communication on food safety risks, particularly for transboundary threats.

Invest in capacity building

Investing in the capacity of veterinary and public health workers to communicate effectively is essential. Recommended actions include:

- Offering regular training on risk communication strategies, including how to tailor messages to diverse audiences and handle media relations.
- Providing technical training on food safety hazards, so communicators can accurately convey the risks and benefits to the public.

Enhance use of technology

Technological tools can significantly enhance the reach and impact of food safety risk communication efforts. Authorities should:

- Develop and promote mobile applications for food safety alerts and information dissemination, particularly in rural areas.
- Use social media strategically to engage different demographic groups, monitor public concerns, and correct misinformation in real-time.

Foster community engagement

Community-level involvement is crucial for ensuring that food safety messages resonate with local populations. Recommended approaches include:

- Engaging trusted community leaders, such as religious figures or local influencers, to help communicate food safety messages in culturally appropriate ways.
- Implementing participatory communication methods that involve local communities in the decision-making process, ensuring that food safety interventions align with their needs and practices.

Promote transparency and trust

Building public trust is a cornerstone of effective risk communication. Authorities should:

- Be transparent about food safety risks, actions being taken, and areas of uncertainty, particularly during crises.
- Maintain open channels of communication with the public, encouraging dialogue and responding promptly to concerns.

Integration of social media and influencers

Social media platforms have become vital channels for reaching broad audiences in real-time. These platforms offer opportunities to engage with the public, provide updates, and dispel misinformation during food safety crises. Utilizing influencers - trusted figures within communities - can amplify important food safety messages.

- **Influencer collaboration**: Engaging local influencers or celebrities who can promote food safety tips can make messaging more relatable, especially to younger audiences. For instance, influencers might share videos demonstrating safe food preparation techniques or offer advice on preventing foodborne illnesses.
- **Social media campaigns**: Short videos, infographics, and interactive posts on platforms like Facebook, Instagram, and TikTok can help raise awareness about food safety in an engaging and shareable format. These campaigns can also serve as a platform for responding to public questions and concerns, providing clarity on food safety matters in a timely manner.
- **Real-time alerts**: During foodborne illness outbreaks or product recalls, social media can serve as a rapid communication tool for disseminating urgent alerts to consumers. Quick updates and links to official sources ensure that the public receives accurate information in critical situations.

Community-based risk communication

In rural areas where access to the internet or mass media may be limited, community-based risk communication remains essential. Involving local leaders, farmers, and community groups can foster trust and ensure that messages are delivered effectively.

- **Community champions**: Identifying and training respected community members as food safety advocates can help ensure that food safety practices are embraced at the local level. These champions can lead workshops, demonstrate safe food handling practices, and disseminate information to their peers.

- **Village health volunteers**: Many Southeast Asian countries have volunteer health workers in rural areas who can serve as a bridge between public health agencies and the local population. These volunteers can help distribute food safety materials and answer questions from community members, especially during foodborne disease outbreaks.
- **Farmer field schools**: For agricultural communities, establishing "farmer field schools" can be an effective way to promote food safety practices in livestock and crop production. These schools offer hands-on training and peer learning opportunities, ensuring that food producers are well-informed about safe farming and processing practices.

Risk communication targeted at urbanization and changing consumer habits

Southeast Asia is experiencing rapid urbanization, with significant changes in consumer behavior. Increased demand for processed foods, fast food outlets, and online food delivery services poses new food safety challenges.

- **Consumer education on processed foods**: As the consumption of processed foods rises, public health authorities should emphasize the importance of reading food labels, paying attention to expiry dates, and storing food properly. Risk communication efforts should address potential hazards associated with additives, preservatives, and food packaging.
- **Online food delivery safety**: The growing popularity of online food delivery services requires new risk communication strategies. Authorities should educate consumers about the risks of food contamination during transportation and handling, emphasizing the importance of ordering from certified restaurants and ensuring proper storage upon delivery.
- **Urban food markets**: Many urban centers still rely on traditional wet markets for fresh food. Risk communication efforts should target vendors in these markets to promote proper hygiene practices, temperature control, and safe meat handling. Consumers should also be educated on how to select safe, fresh produce and meat.

Improving transparency in food safety systems

Transparency in food safety systems fosters trust between authorities and the public. Making food safety data, surveillance reports, and investigation outcomes publicly available allows consumers to make informed choices and builds confidence in the safety of the food system.

- **Public access to food safety data**: Governments can create online platforms where the public can access information about foodborne illness outbreaks, food recalls, and inspection results for restaurants, food vendors, and processing plants. This helps consumers stay informed and promotes accountability among food businesses.
- **Reporting systems for foodborne illnesses**: Encouraging the public to report foodborne illnesses helps authorities identify outbreaks early. User-friendly mobile apps or websites can be developed to allow consumers to report cases, with the assurance that their data will contribute to improving overall food safety.

Addressing the informal food sector

The informal food sector, including street food vendors and small, unregistered food businesses, plays a significant role in Southeast Asia's food economy. However, it presents unique food safety challenges due to limited regulatory oversight.

- **Vendor training programs**: Risk communication strategies should include educational programs tailored to informal food vendors, focusing on basic hygiene, safe food storage, and contamination prevention. These programs can be delivered through local health departments or trade associations.
- **Public health campaigns on street food**: Street food is a popular choice for many consumers, but it comes with food safety risks. Public health authorities can run campaigns encouraging consumers to choose vendors who practice safe food handling, such as using clean utensils, wearing gloves, and maintaining a clean cooking environment.
- **Incentives for compliance**: Providing incentives for informal vendors to adopt food safety practices, such as offering free or subsidized food safety certifications, can help elevate hygiene standards in this sector. Public campaigns can highlight certified vendors, boosting their credibility and encouraging consumer trust.

Risk communication during food recalls and contamination events

During food recalls or contamination events, timely and clear communication is critical to prevent public harm and maintain trust in the food system.

- **Clear messaging on recalls**: Risk communication during recalls should be direct and easy to understand. Authorities should provide specific details about the recalled product, including batch numbers, packaging information, and the reason for the recall. Messaging should also include instructions on what consumers should do if they have purchased the product.
- **Collaborative response with media**: Partnering with the media to ensure consistent, accurate reporting on food safety issues is vital. Journalists should receive clear, factual updates from food safety authorities, reducing the risk of misinformation spreading during recalls or outbreaks.
- **Post-incident communication**: Once a food safety incident is resolved, ongoing communication is necessary to rebuild public trust. Authorities should provide information on how the problem was addressed, any long-term changes to food safety regulations, and steps taken to prevent future incidents.

Future directions for food safety risk communications

The evolving nature of food systems, climate change, and emerging zoonotic diseases present ongoing challenges for food safety in Southeast Asia. As food safety risk communication continues to evolve, there are key areas for future development that veterinary and public health workers should consider to improve communication efforts.

Addressing emerging risks

The global food system is increasingly interconnected, leading to new risks and challenges. Emerging foodborne pathogens, antimicrobial resistance (AMR), and climate change are examples of complex risks that require adaptive communication strategies.

- **Emerging pathogens**: As new foodborne pathogens emerge, such as novel strains of bacteria or viruses, risk communication must adapt rapidly to provide timely and accurate information. Surveillance systems that track emerging threats should be integrated with communication strategies to alert the public and stakeholders promptly.
- **Antimicrobial resistance (AMR)**: AMR poses a significant threat to food safety as the use of antimicrobials in livestock production can lead to resistant bacteria in the food chain. Communication campaigns should educate farmers, veterinarians, and consumers on responsible antimicrobial use and highlight the connection between AMR and food safety.
- **Climate change**: Climate change is expected to increase the frequency of extreme weather events, which can disrupt food production, storage, and distribution systems, leading to greater food safety risks. Future communication strategies should incorporate climate-resilient food safety measures, emphasizing the need for stronger safeguards in vulnerable areas.

Strengthening regional cooperation

Given the transboundary nature of many food safety risks, regional cooperation is vital. Countries in Southeast Asia should strengthen collaborative mechanisms for sharing information, harmonizing food safety standards, and coordinating communication efforts.

- **ASEAN food safety cooperation**: Building on existing frameworks, such as the ASEAN Food Safety Policy, member states should enhance communication on shared risks, ensuring that neighboring countries are aligned on messaging and response efforts.
- **Regional surveillance systems**: Establishing regional food safety surveillance systems can improve the detection and communication of emerging threats. Countries can share data on foodborne illness outbreaks, hazardous substances, and food recalls, enabling faster, coordinated responses.
- **Cross-border risk communication**: Given the movement of food products across borders, regional communication strategies should address cross-border food safety concerns, ensuring consistent messaging to prevent the spread of misinformation.

Promoting inclusivity in communication

Inclusivity ensures that all populations, especially vulnerable groups, receive and understand food safety messages. Future risk communication strategies must consider the needs of diverse groups, including rural communities, indigenous populations, and those with limited literacy or internet access.

- **Local language communication**: Risk communication should be available in multiple local languages to ensure broad accessibility. This can involve translating key messages and engaging local media channels, such as community radio stations, to reach remote populations.

- **Tailored approaches for vulnerable groups**: Certain groups, such as smallholder farmers, women, and low-income consumers, may face unique food safety challenges. Tailored communication strategies should address their specific needs, providing relevant information that empowers them to make safer food choices.
- **Using multiple channels**: A multi-channel approach can help reach diverse populations. In addition to digital platforms, traditional forms of communication, such as radio broadcasts, community meetings, and printed materials, remain crucial for ensuring inclusivity in food safety messaging.

Incorporating behavioral science into risk communication

Understanding how people perceive and respond to food safety risks is essential for effective communication. Behavioral science can provide insights into how different audiences process information, make decisions, and take action to mitigate risks.

- **Risk perception**: Different populations may perceive food safety risks differently based on cultural, social, and economic factors. Tailoring messages to address these perceptions can increase the effectiveness of communication efforts.
- **Behavioral change strategies**: Encouraging long-term behavior change requires more than just providing information. Risk communication should include strategies to promote sustained adoption of safe food handling practices, such as incentives for compliance or community-driven campaigns that reinforce positive behaviors.
- **Social norms and peer influence**: People are more likely to change their behavior when they see others doing the same. Risk communication campaigns can leverage social norms by highlighting positive examples of individuals or communities practicing safe food handling and preparation.

Leveraging big data and artificial intelligence (AI)

Advances in data analytics and AI can enhance food safety risk communication by providing real-time insights and predicting future risks. Integrating these technologies into communication strategies will help public health and veterinary authorities anticipate and respond to food safety challenges more effectively.

- **Real-time data collection**: Technologies like mobile apps and online platforms can collect real-time data from consumers, farmers, and food businesses, enabling authorities to quickly identify and address food safety incidents. This data can also inform risk communication by identifying trends in food safety knowledge and behavior.
- **Predictive analytics**: AI can be used to analyze large datasets from multiple sources (e.g., food production, weather patterns, public health records) to predict food safety risks before they occur. By forecasting potential hazards, authorities can communicate preventive measures to stakeholders in advance, reducing the likelihood of foodborne illness outbreaks.
- **Personalized risk communication**: AI-powered systems can tailor food safety messages to individual consumers based on their behaviors and preferences. For example, an app could provide personalized food safety tips based on the user's shopping habits or dietary restrictions, making communication more relevant and actionable.

Conclusion

Risk communication is critical for food safety in Southeast Asia, where diverse food systems, cultural practices, and emerging threats create unique challenges. Veterinary and public health workers must collaborate across sectors, craft culturally sensitive messages, and utilize diverse communication channels to effectively engage various audiences. Clear and coordinated communication is essential to reducing food safety risks and protecting public health.

The region must invest in capacity building, innovative technologies (like mobile apps for rapid alerts), and cross-border collaboration to strengthen food safety systems. As global food trade and environmental changes intensify, risk communication will be key to maintaining food safety.

Veterinary and public health workers play a vital role in conveying risks across the food chain, from producers to consumers. By leveraging technology, engaging media, fostering public participation, and continually refining communication efforts, they can make food safety systems more resilient. Effective communication builds trust, prevents foodborne illnesses, and protects public health.

References

1. World Health Organization. (2020). *Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response*.
2. FAO & WHO. (2019). *Food Safety Risk Communication: Guiding Principles and Practices*.
3. Vietnam Ministry of Health. (2017). *National Action Plan on Food Safety*.
4. FAO. (2015). *Food safety risk communication toolkit for Asia-Pacific*.
5. ASEAN. (2016). *Food Safety Risk Communication in Southeast Asia: Strategies and Best Practices*.
6. World Health Organization (WHO). (2020). *One Health Approach: Tackling Food Safety and Zoonotic Diseases in Southeast Asia*.
7. Vietnam Food Administration (VFA). (2017). *Food Safety Management in Informal Markets: A Case Study*.
8. ASEAN Regional Integration Support by the EU (ARISE Plus). (2021). *Cross-border collaboration in food safety management across Southeast Asia*.
9. FAO/WHO. (2018). Effective Risk Communication for Food Safety and Zoonotic Diseases.
10. ASEAN. (2020). Strengthening Food Safety Risk Communication in Southeast Asia.
11. WHO. (2019). Public Health Risk Communication: Food Safety Guidelines.
12. Vietnam Ministry of Agriculture and Rural Development (MARD). (2020). Food Safety Risk Management: National Strategy.
13. International Food Policy Research Institute (IFPRI). (2021). Leveraging Technology for Improved Food Safety Communication.
14. FAO. (2019). Best Practices in Risk Communication for Food Safety: A Practical Guide.
15. WHO Regional Office for the Western Pacific. (2020). Foodborne Diseases in Southeast Asia: Current Threats and Communication Strategies.
16. ASEAN. (2021). Public-Private Partnerships in Food Safety: Lessons from Southeast Asia.

17. Philippine Department of Agriculture. (2020). Managing African Swine Fever: A Communication Guide for Southeast Asian Countries.
18. Thai Ministry of Public Health. (2018). Integrated Pest Management and Food Safety Communication in Thailand.
19. Vietnam National Institute of Food Control. (2016). Strengthening Community-Level Engagement in Food Safety Risk Management.
20. FAO and WHO. (2020). *Food Safety Risk Communication: A Framework for Southeast Asia*.
21. International Food Safety Authorities Network (INFOSAN). (2021). *Leveraging AI and Big Data for Food Safety Risk Communication*.
22. WHO Regional Office for Southeast Asia. (2019). *Emerging Food Safety Risks in Southeast Asia: Strategies for Effective Communication*.
23. ASEAN Secretariat. (2022). *Cross-border Cooperation in Food Safety Risk Management*.
24. United Nations Environment Programme (UNEP). (2020). *Climate Change and Food Safety: Impacts and Communication Strategies*.
25. World Organisation for Animal Health (OIE). (2021). *Antimicrobial Resistance and Food Safety: Communication Guidelines for Southeast Asia*.
26. FAO. (2021). Risk Communication Applied to Food Safety.
27. ASEAN Secretariat. (2020). Guidelines for Risk Communication and Crisis Management in Food Safety.
28. WHO Regional Office for Southeast Asia. (2018). Community Engagement in Food Safety: A Strategic Framework.
29. FAO & WHO. (2019). Tackling Antimicrobial Resistance in Food Systems: A Food Safety Perspective.
30. OIE. (2020). Training Manual for Street Food Vendors on Food Safety Standards.

ASEAN-CGIAR
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The **ASEAN-CGIAR Innovate for Food and Nutrition Security Regional Program** is a research collaboration among the ASEAN Member States, ASEAN Secretariat, and CGIAR Centers, with funding support from the government of Australia and the United Kingdom. The program's vision for the next 10 years is to scale up and out bold integrated innovations that will enhance the resilience of ASEAN's agri-food systems to climate change. This ambitious endeavor aims to deliver better livelihoods for food producers and other stakeholders along the value chain. It also seeks to ensure more affordable, nutritious, and healthy food for consumers while fostering a healthier natural environment for all.

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