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Policy Considerations for the Development and Adoption of Technologies for  
Local Food Value Chains

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**Background**

The development and adoption of suitable technologies for food value chains is a viable option for managing food safety risks. For example, developing countries with high smoke-cured fish consumption record a high exposure to polycyclic aromatic hydrocarbons (PAHs, food safety hazards capable of causing cancer) through consumption of smoked fish<sup>1</sup>. An improved kiln recently introduced as an intervention has been found to reduce the hazard levels by over 200 times<sup>2</sup>. The use of solar dryers for fresh produce drying is also helping to reduce the otherwise high postharvest losses in fruits and vegetables during seasonal gluts. New technologies can therefore safeguard public health and improve livelihoods.

To fully realize the gains from such technologies, however, an enabling policy environment should be in place and should have the following considerations:

**1) Benchmarking of innovations**

It is important to establish criteria by which any new/improved technology will be measured prior to adoption. Among other benefits, this will ensure prudent use of resources and avoid innovation redundancies. The criteria could cover issues such as:

- a) **Food safety:** Innovations should have a demonstrated efficacy to guarantee low occurrence of, and low consumer exposure to, critical food safety hazards in the value chain considered
- b) **Adaptability to sociocultural contexts:** Innovations should be amenable to adaptation to various sociocultural contexts
- c) **Decent work (occupational health and safety, economic viability and sustainability):** The innovation should:
  - i. reduce the exposure of processors to occupational hazards linked to the value chain
  - ii. allow product value addition to increase the income of its users
- d) **Environmental protection and sustainability:** Where applicable, innovations should support greening of value chains through a shift to renewable energy sources

**2) Creating market incentives for adoption of new technologies**

The guarantee of market access is a key driver of technology development and adoption. Therefore, policies should facilitate the provision of market incentives to support the adoption of improved technologies. Steps such as differentiation of products from improved technologies (e.g. premium pricing, improved packaging and traceability) and support for access to more rewarding markets will be instrumental in promoting the adoption of new/improved technologies.

**3) Risk profiling/assessment of food safety hazards relevant to public health and trade**

In light of the need for evidence-based decision making in food safety management, scientific evidence should be generated to inform and/or support the drive for developing technology aimed at improving food safety. A roadmap should be defined for developing national risk profiles/assessments for hazard-food

combinations that are important for food and nutrition security and trade. Such national assessments should be considered preparatory for regional risk assessments to aid technology transfers and support harmonization of food safety standards.

#### **4) Development and enforcement of standards on priority food safety hazards**

The compliance burden on producers, and the cost to regulators for assessing compliance, could be reduced by focusing attention on hazards that have documented relevance to public health and trade in particular contexts. Policy commitments are needed to require that standards are streamlined to agree with scientific evidence, with due regard to Codex normative instruments. Policy support is required for commensurate investments in the enforcement of such standards.

#### **5) Resourcing of laboratories to support enforcement of regulatory standards**

There should be a policy commitment to develop and/or adequately resource national laboratories. This will save states the cost of relying on overseas laboratories for assessing technology performance and evaluating regulatory compliance.

#### **6) Public education on the health benefits of products from improved technologies**

Since adoption of new technologies is strongly market-driven, and consumer acceptance is a strong market force, policies should allow investments in public education on:

- a) the (health, economic, environmental etc.) challenges of traditional techniques/practices that warrant a change
- b) the benefits of improved technologies

For example, some consumers in Africa have a cultural attachment to smoked fish that are very dark in colour (near-black). However, such dark intensity is an indicator of high levels of tar deposits that may pose risks for cancer. Education will therefore be needed to promote acceptance of products from new technologies that may look different (e.g. lighter colour of smoked fish) but protect public health.

#### **7) Development and inclusion of priority areas for academia and research**

New technology development and related teaching and research in institutions of higher learning should be informed by and directly address national priority needs for food safety and food security.

## REFERENCES

1. Garrido Gamarro, E., Yvette DieiOuadi, and Bomfeh, K. 2017. Risk Management for PAH in Smoked Fish. Paper presented at World Seafood Congress, Iceland, September 2017.
2. Bomfeh, K., De Meulenaer, B., Jacxsens, L., Amoa-Awua, W.K., Tandoh, I. & Afoakwa, E.O. 2016. Meeting food safety targets in shifting from traditional to new fish smoking systems: a case study in Ghana. A collaborative study by the Food and Agriculture Organization, University of Ghana and Ghent University. Final report.

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