Integrated food assurance system

M Fajri
BPTP Yogyakarta, Special Region of Yogyakarta, Indonesia

Email: fajri.litbangtan08@gmail.com

Abstract. A good food is a food which is good at quality, safe and halal. A system is needed to ensure that quality, the safety, and its halal labeled. In Indonesia, quality assurance system, safety assurance system, and halal assurance system have not been integrated into one system. A food assurance certification in the form of GMP certificate, HACCP certificate, and also Halal certificate is carried out individually by the authorized institution (certification body, LPPOM MUI and BPOM). An individual certification costs a separate fee. This insignificant cost is certainly burdensome for small and medium enterprises (SMEs) which have a limited fund. This will certainly hamper the development of Food SMEs to compete in national or international market. The aim of this study was to produce recommendation for an integrated food quality, safety and halal assurance system. The research method applied was review of the requirements contained in ISO 9001, ISO 22000 and HAS 23000. The quality assurance system refers to ISO 9001 and GMP, the safety assurance system refers to ISO 22000 and HACCP and the halal assurance system refers to HAS 23000. The integrated system is expected to reduce cost of food assurance certification, especially for Food SMEs.

1. Introduction
The food is a basic human need that must be fulfilled themselves. Limited food availability can cause malnutrition and endanger for health. A healthy food is food that is protected from physical, biological, chemical and other contaminant and also does not get in contradiction to the religion and the culture of the society [1]. For Muslims, the food is not only to fulfill nutritional needs, but also to implement the religious provisions. Those rules are stated in the status of halal (permitted) and haram (prohibited). Safe food for Muslims is safe and halal food. To realize these, the food producers must be able to provide guarantees for the food produced. In Indonesia, the products come, circulate and trade within Indonesian territory must be halal certified [2]. Therefore, every food industry including SMEs must have halal certificates and labels on their products. The quality food is food whose quality is guaranteed, safe and halal. To ensure the quality, safety and halal of food products, a system or standard that can guarantee is needed. In Indonesia, there has been already a quality assurance system, a security assurance system and a halal assurance system, separately. The quality assurance system refers to ISO 9001 and GMP, the food safety assurance system refers to ISO 22000 and HACCP and the halal assurance system refers to HAS 23000. Certification of food products in the form of GMP certificates, HACCP certificates and Halal certificates is carried out individually by each authorized institution. GMP certificates are issued by BPOM, HACCP certificates are issued by LS-SHACCP and Halal certificates are issued by LP-POM MUI. Considering the limited funds owned by SMEs, the demands for halal product guarantee obligations and increasingly fierce global competition, it is necessary to
find a breakthrough so that food SMEs can obtain halal product guarantees as well as safe and quality so that they are more efficient in terms of time, human resources and costs.

2. Methods
The integration of halal management system (HMS), food safety management system (FSMS) and quality management system (QMS) refers to SNI 99001:2016 (HMS) based on HAS 23000 (SJH), ISO 22000:2009 (FSMS) based on SNI 01–4852–1998 (HACCP) and ISO 9001:2015. (QMS) based on QA combining GMP and SSOP. This integration can form an integrated food assurance system (IFAS). The integration method of the three management systems is to examine the general requirements of each management system (FSMS, QMS, HMS).

3. Results
Based on a review of the requirements contained in SNI ISO 22000:2009, ISO 9001:2015 and SNI 99001:2016 resulted in integration as presented in table 1.

4. Discussion
The implementation of an integrated food assurance system can help organizations require every mandatory requirement in all three assurance systems. The integration developed provides benefits for internal organizations including saving work time for personnel in routine meeting activities by 13.4%, reducing operating costs by 18.8% and being able to reduce the number of findings of non-conformities in the audit process by the authorities [6]. These benefits are certainly very helpful for SMEs to finance their food assurance certification.

Most Moslem scholars state that Islamic law is the knowledge of halal and haram. In Islam, consuming halal, holy and good food is a religious command and a duty (obligatory). Every Moslem who consumes food must ensure the halal labeled. If the food is halal, it is permitted to be consumed. But if it is not, that food must be kept away from a Moslem [7]. To provide quality assurance, safety, and halal food, an integrated food assurance system is needed. Namely the integration of a quality management system (ISO 9001:2015), a food safety management system (ISO 22000:2009) and a halal management system (SNI 99001:2016) called the Integrated Food Assurance System (IFAS).

In the implementation, IFAS is based on the simultaneous implementation of GMP, SSOP, HACCP, and Halal assurances. GMP and SSOP are basic requirements for HACCP implementation. GMP (Good Manufacturing Practices) is a guideline for food producers to produce food properly. Not only concerning the processing aspects, but all aspects (18 items) which are related to food production. Whereas SSOP (Sanitary Standard Operating Procedure) is a standard procedure that must be used by food producers to meet good sanitation (clean and sanitary). There are 8 sanitation procedures that must be observed by the food industry. HACCP (Hazard Analysis Critical Control Point) is an analysis tool to prevent the possibility of potential hazards, whether physical, chemical, biological or microbiological, which can cause health problems. The stages of the processes that greatly affect food safety are called critical control points (CCP). Halal assurance is an integrated system designed to regulate and maintain that materials, processes, products, human resources, procedures are required the halal criteria created by the halal certification institution (BPJPH) based on the fatwa of the Indonesian Ulama Council.
Table 1. The integrated food assurance system (IFAS) based on a review of the requirements contained in SNI ISO 22000:2009, ISO 9001:2015 and SNI 99001:2016.

| Requirements            | Descriptions                                                                 |
|-------------------------|-----------------------------------------------------------------------------|
| cope                    | This standard applies to organizations that establish requirements that the food produced is good, safe and halal (Islamic lawful). |
| Normative references    | SNI ISO 22000:2009 [3], ISO 9001:2015 [4] and SNI 99001:2016 [5]             |
| Terms and definitions   | Terms and definitions given in SNI ISO 22000:2009, ISO 9001:2015 and SNI 99001:2016 apply. |
| Context of the organization | The organization shall determine internal and external issues that are relevant to the strategic goals and direction of the organization and that affect its ability to achieve the intended results of its quality, safety and halal management system. The organization shall establish, implement, maintain and improve the quality, safety and halal management system and its scope. |
| Leadership              | Top management shall demonstrate leadership and commitment with respect to the quality, safety and halal management system. Top management shall demonstrate leadership and commitment with respect to customer focus. Top management shall establish, implement and maintain the quality, safety and halal policy and communicate it to relevant interested parties. |
| Planning                | The organization shall plan actions to address risks, hazards and halal violations. The organization shall establish the quality, safety and halal objectives at the functions, levels and processes needed at the quality, safety and halal management system. When the organization determines the need for changes to the quality, safety and halal management systems, the changes shall be carried out in a planned manner. |
| Support                 | The organization shall determine and provide the resources needed for the establishment, implementation, maintenance and continual improvement of the quality, safety and halal management system. The organization shall determine the necessary competence of the person (s) doing work under its control that effects the performance and effectiveness of the quality, safety and halal management system. The organization shall ensure that person (s) doing work under the organization’s control are aware of the policy of quality, safety and halal, relevant quality objectives and contribute to the effectiveness of the quality, safety and halal management system. The organization shall determine the internal and external communications relevant to the quality, safety and halal management system. The quality, safety and halal management system shall include documented information required by this standard and documented information determined by the organization as being necessary for the effectiveness of the quality, safety and halal management system. |
| Operation               | The organization shall plan, implement and control the processes needed to meet the requirements for providing quality, safe and halal products. The organization shall implement and ensure the effectiveness of planned activities, include GMP, SSOP, HACCP and HAS. |
| Performance evaluation  | The organization shall determine what needs to be monitored and measured The organization shall determine the methods for monitoring, measurement, analysis and evaluation and when the monitoring and measuring shall be performed. The organization shall evaluate the performance and effectiveness of the quality, safety and halal management system. |
| Improvement             | The organization shall determine and select opportunities for improvement and implement of necessary actions to meet customer requirements and enhance customer satisfaction. |
5. Conclusion
The integrated food assurance system can help SMEs in managing quality assurance, food safety and halal with a relatively low in terms of cost, people and time. The integrated food assurance system will also provide multi-layered protection and be a very effective approach to produce food with a higher standard (good quality, safe and halal).

References
[1] Undang-undang Nomor 12 Tahun 2012 tentang Pangan
[2] Undang-undang Nomor 33 Tahun 2014 tentang Jaminan Produk Halal
[3] BSN 2009 SNI ISO 22000:2009 Sistem manajemen keamanan pangan-persyaratan untuk organisasi dalam rantai pangan
[4] ISO 2015 ISO 9001:2015 Quality management system-requirements
[5] BSN 2015 SNI 99001:2016 Sistem manajemen halal
[6] Ivada P A, Hermanianto J and Kusnandar F 2015 Integrated management system of ISO 9001, ISO 22000 and HAS 23000 and its application in dairy processing industry Jurnal Mutu Pangan 2 66–73
[7] Hidayat A S and Siradj M 2015 Sertifikasi halal dan sertifikasi non halal pada produk pangan industry Ahkam 15 199–210