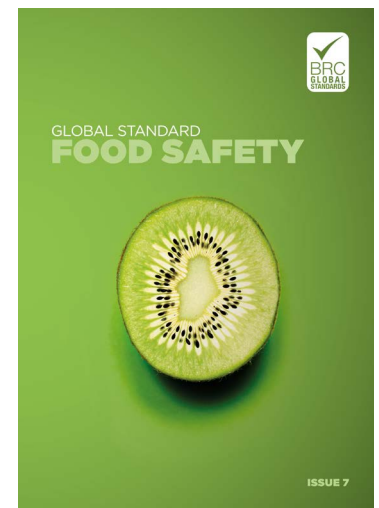




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# **A COMPARATIVE ANALYSIS OF FOOD SAFETY STANDARDS: THE BRC GLOBAL STANDARD FOR FOOD SAFETY, ISO 22000 AND FSSC 22000**

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## OVERVIEW

Appropriateness of a scheme or a Standard, with respect to the industry, a site and its customers, can be measured by considering the scope and coverage of the scheme, ease of interpretation and understanding, ability to train the concerned personnel on its requirements, adequacy of guidelines for implementation, qualification of auditors and certification bodies, effective audit methodology, adherence to protocol, availability of correct information about the site and recognition of the scheme for the trade (both global and local). These criteria form the basis for a comparative evaluation of the BRC Global Standard for Food Safety, the FSSC 22000 Standard and the ISO 22000 Standard.

The BRC Global Standard for Food Safety sets out the requirements for the manufacture of processed foods and the preparation of primary products supplied as retailer branded products, branded food products and food or ingredients for use by food sector companies, catering companies and food manufacturers. The Standard covers food safety, integrity and quality, and addresses legal compliance as well.

The ISO 22000 International Standard specifies requirements for a food safety management system where an organisation in the food supply chain (farm to fork approach) needs to demonstrate its ability to control food safety hazards in order to ensure that food is safe at the time of human consumption. The Standard is primarily focussed on food safety requirements only. It is written based on the PDCA (Plan-Do-Check-Act) cycle prescribed by the ISO (International Organization for Standardization).

The FSSC 22000 Standard is managed by the independent Foundation FSSC 22000. The scheme is fully based on the independent Standards: ISO 22000 and ISO 22003, with sector-specific technical specifications for Prerequisite Programmes (PRPs) and additional scheme requirements. ISO/TS 22002 (based on BS PAS 220) covers the PRP requirements. ISO 22000, ISO/TS 22002, and additional requirements must be used together to fulfil the requirements of FSSC 22000, but these components are all different Standards.

## FUNDAMENTAL REQUIREMENTS

<b>BRC GS FOOD SAFETY</b>	<b>ISO 22000/ FSMS</b>
Senior Management Commitment	Food Safety Management System
The food Safety Plan- HACCP	Management Responsibility
Food Safety & Quality Management System	Resource Management
Site Standards	Planning and realization of safe product
Product Control	Validation, verification, and improvement of FSMS
Process Control	Certification to FSSC 22000
Personnel	Certification to ISO 22000 + Sector Specific PRPs + Additional Requirements

## **BASIC STRUCTURE**

The BRC Global Standard for Food Safety has been developed to specify safety, integrity, quality and operational criteria required to be in place within a food organisation to fulfil obligations with regard to legal compliance and protection of the consumer. The first version of the BRC Global Standard for Food Safety was published in 1998. It is an internationally recognised and GFSI-benchmarked single standard and protocol governing an accredited audit. Accreditation of the Standard is based on ISO/IEC 17065, which is product-specific and concerned with verifying that particular products meet specified requirements.

The BRC Global Standard is written and updated with international stakeholder consultation including an international advisory board, BRC Global Standards executives, technical advisory committees and certification body co-operation groups. Stakeholders include leading retailers, food manufacturers, food services companies and certification bodies.

The BRC Global Standard is managed in a way that is responsive to the needs and expectations of the stakeholders. The Standard is updated at regular intervals (typically every 3 to 4 years). Timely improvement and updating of the Standard gives assurance and confidence to customers of the certificated sites.

ISO 22000 is published by ISO (International Organization for Standardization), a worldwide federation of national Standard bodies. ISO 22000 is prepared by the ISO technical committee as per rules given in the ISO IEC Directives. The ISO 22000 Standard was published in 2005 to pay particular attention to food safety requirements and the same version is valid at the time of writing. ISO 22000 does not provide any scheme management.

The ISO 22000 (FSMS) Standard was published in 2005 by ISO to ISO/TS 22002 (a replacement of PAS 220:2008) as an additional supplement to the PRPs of ISO 22000 to qualify for the FSSC 22000 Standard, which was published in 2009.

Accreditation of the schemes- ISO 22000 and FSSC 22000 are based on ISO 17021 in combination with ISO/TS 22003:2013, which covers conformity assessment of management systems and audit and certification of food safety management systems. However, ISO 17021 and ISO 22003 do not attest to the safety or fitness of the products of an organisation within the food chain.

It is important to note that the BRC Global Standard for Food Safety covers only food and pet food and has separate Standards for Packaging and Packaging Materials, Storage and Distribution, and Retail, whereas the ISO 22000 Standard has 6 clusters: Farming, Food & Feed Processing, Catering; Retail, Transport and Storage, Auxiliaries Services and Biochemical (which includes 11 different categories), and the FSSC 22000 Standard covers 8 out of 11 categories using different pre-requisite programmes.

## **INTERPRETATION, ESTABLISHMENT AND IMPLEMENTATION BASED ON THE STANDARDS' REQUIREMENTS**

The BRC Global Standard for Food Safety is written in such a way that it is easy to understand and adopt by all types and at all scales of food processing and primary production sites. Requirements of

the Standard for audits, information on the audit process, rules related to the audit and certification process and auditor competency requirements are combined in a single document.

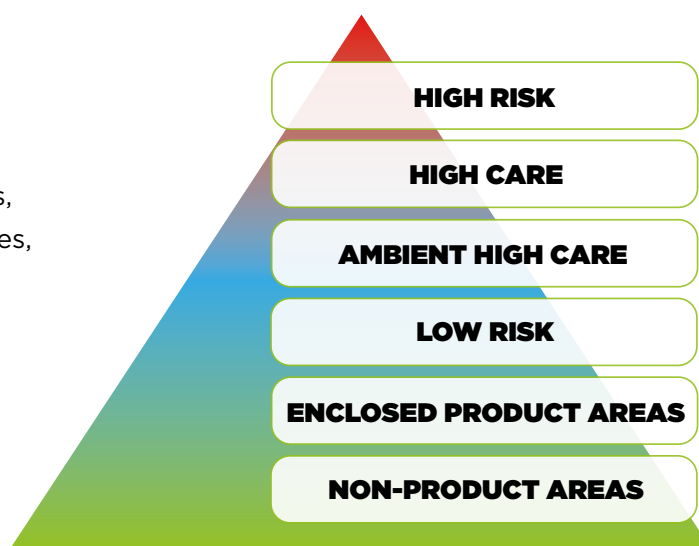
The Standard is prescriptive in nature and elaborates on how a site can demonstrate compliance against the various requirements of the Standard. In-depth analysis of the Standard's requirements, whether related to elements of the management system or food safety or pre-requisite programmes, demonstrates that bullet points, specified minimum frequencies, requirements of procedure/policies/plans, risk assessment and recorded checks, etc. make it easier for the site's core food safety and quality teams to understand and implement the requirements.

The ISO 22000 Standard is written based on the PDCA cycle prescribed by the ISO. The Standard covers the entire food chain so the requirements are mentioned in a generic way for the sites to interpret as per their respective positions in the food supply chain. Moreover, requirements related to one aspect are not mentioned in single clauses and cross references are given within many clauses. Internal and external verification against the Standard become challenging as different interpretation possibilities provide discretionary powers to the personnel involved in verifying the requirements. Establishment of the system and its implementation is possible mostly for sites that already have competent resources and a sizeable quality assurance department.

ISO/TS 22002, part of the FSSC 22000, is better in terms of ease of interpretation, and it is being further improved. However, ISO 22000 and ISO 22003, parts of FSSC 22000, remain the same.

## GUIDANCE

Guidance about the requirements of the Standards is important for their effective implementation. The BRC Global Standard has developed required training programmes, guidance documents, interpretation guidelines, reports, case studies, webinars, and position statements on various aspects related to the Standard, e.g. risk zoning within the processing and storage facilities, traceability, etc. These guidelines are available on the BRC Global Standards bookshop and through BRC Participate.



The FSSC 22000 Standard has an approval process for the training programmes developed by concerned organisations. FSSC has published additional requirements related to certification and the certification process, which has expanded its scope and added elements not covered by either ISO 22000 or ISO 22002. FSSC has also conducted webinars on different topics such as audit planning.

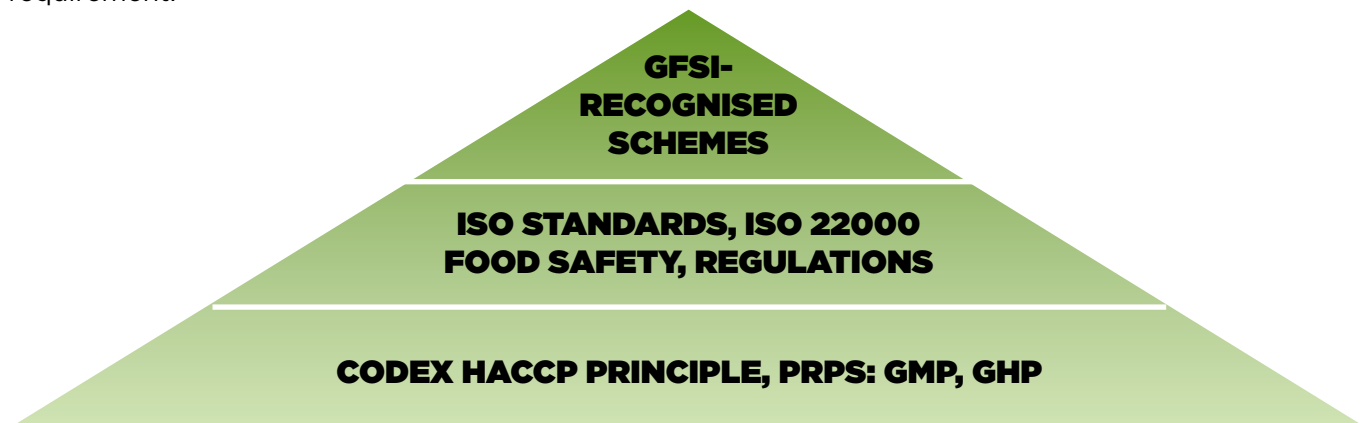
The ISO 22000 Standard accepts the training programmes developed by concerned training-related organisations. The ISO 22000 Standard has interpretation guidelines but does not provide additional guidance as part of its scheme management.

## **GFSI RECOGNITION**

The Global Food Safety Initiative (GFSI), a non-profit foundation, is the result of collaboration between some of the world's leading food safety experts from retailers, manufacturers and food service companies, as well as service providers active in the food supply chain. GFSI sets the requirements for food safety schemes. Schemes desiring to gain GFSI benchmarking must meet the requirements of the GFSI Guidance Document. It is important to note here that GFSI benchmarking of the schemes or Standards is based on food safety criteria only. GFSI-benchmarked Standards have better acceptability in global trade, especially from a customer point of view.

The BRC Global Standard for Food Safety was the first Standard to be benchmarked by the GFSI. ISO 22000 is not a GFSI-benchmarked Standard as it could not meet the specific requirements of the GFSI Guidance Document.

FSSC 22000 is a GFSI-benchmarked Standard. PAS 220 and later, ISO/TS 22002, were used and developed respectively to complement ISO 22000 in order to meet the GFSI benchmarking requirement.



## **AUDITOR REQUIREMENTS**

In order to carry out thorough audits against the Standards in different sectors of the food industry, auditors are required to be competent in terms of education, qualifications, work experience, audit training, regulatory requirements and their relevant product category.

The BRC Global Standard for Food Safety criteria covers the above requirements, requiring a degree or higher education course in a food or bioscience discipline, a minimum of 5 years of industrial experience, HACCP training, 40 hours of auditor training, online exams for 18 identified categories and audit observation and witnessing by qualified certification body auditors for 10 audits or 15 audit days. Auditor qualification is validated by the BRC Global Standards team for registration and auditor code allocation.

In the case of ISO 22000, evaluation of auditor qualification for different technical areas (as per ISO 22003) by the certification body is verified by the accreditation bodies on a sampling basis, and auditor qualification is not subject to a centralised control by the Standard.

The FSSC 22000 Standard follows a similar approach to the BRC Global Standard, except for category exams and auditor code allocation, where certification bodies need to evaluate the competence of the auditors for different technical areas and submit it to the database for approval.

## **AUDIT OPTIONS AND CERTIFICATION PERIOD**

The BRC Global Standard and FSSC Standard provide both announced and unannounced options for the audit.

The unannounced audit option is voluntary in the case of the BRC Global Standard. Sites may change the audit option for due audits within the first three months of certification. The BRC Global Standards certificate is valid for either 1 year or 6 months and audits cover all requirements of the Standard. FSSC Standard certification or recertification audits cannot be conducted as unannounced, but typically one of the two surveillances is required to be unannounced.

Certificates for the FSSC 22000 Standard and ISO 22000 Standard are valid for 3 years with annual surveillances (minimum requirement), where part of ISO 22000 and all parts of the technical specification and additional requirements of the FSSC 22000 Standard are covered.

The FSMS/ISO 22000 Standard provide an announced audit option only.

## **AUDIT METHODOLOGY**

Use of effective audit methodology is required for the correct outcome of the audit.

As per the Auditing Techniques Guidelines, auditors conducting audits towards the FSSC Standard and BRC Global Standard need to spend more than 50% of the audit time in the production area verifying actual activities.

The BRC Global Standard for Food Safety recommends the use of vertical audit methodology which is based on a traceability trial. A typical BRC Global Standard audit is conducted in a single visit and mostly conducted by a single auditor.

The ISO 22000 Standard and FSSC 2000 Standard audit planning is based on the functions and processes within the organisation. Initial ISO 22000/FSSC 22000 audits are conducted in 2 stages. Audit teams visit the site twice to complete the audit.

## **NON-CONFORMITIES; GRADING AND FREQUENCY OF AUDIT**

Standards require auditors to raise non-conformities in cases where a deviation from the requirements of the Standard is identified during the audit. The grade of the nonconformity is dependent on its severity vis-à-vis the implemented system, product safety and legality.

The BRC Global Standard and FSSC Standard have three grades of non-conformities: Minor, Major and Critical. The ISO 22000/FSMS Standard also has three grades: Opportunities for Improvement, Minor, and Major. Corrective action taken for the closure of the identified non-conformities, along with the evidence, is verified by the assigned registered auditor(s) for the audit, then further by an independent technical review process of the certification body.

The BRC Global Standard requires all non-conformities to be corrected by the audited site and closed before certification. The initial certification decision for the FSSC Standard and ISO 22000 Standard is not affected by minor non-conformities and the audited organisation is granted nearly 1 year for closure of the non-conformity.

The BRC Global Standard has a provision for “Grading of the Audit” as well, which indicates the level of compliance of the site during a particular audit. Audit grades (AA, A, B, C, and D) are dependent on the number and severity of non-conformities identified at the time of the audit and the outcome of the audit. Frequency of BRC Global Standard audits can be either 1 year or 6 months depending on the grade.

ISO 22000 (FSMS) and FSSC 22000 (ISO 22000 + ISO/TS 22002) certificates indicate that a site meets the requirements to achieve certification. Level of compliance is not indicated as grades in the case of both of these Standards. Usual frequency of audit is minimum 1 audit per year during the 3-year certification period.

## **REPORT WRITING**

The BRC Global Standard for Food Safety and FSSC 22000 provide a standardised audit report format for all audits against the Standard irrespective of the certification body, country of auditing or language used.

ISO 22000 and ISO/TS 22002 do not provide any specific audit report format so audit report formats are developed by the certification bodies.

## **ONLINE DATABASE**

An online database of certified organisations is beneficial as anyone can verify the validity of the site's certificates and access basic information about the site and its certification.

These websites and databases have two areas: public and private. The public area includes details of the certificated site and approved certification bodies, trainers, etc. The private area includes auditor qualifications and audit-related details and documents. Certification bodies administer changes to the private area of the database by site listing, and uploading documents related to auditors, audits and certification status information.

The BRC Global Standards Directory is an online official database of certificated sites, certification bodies, trainers and auditors. The password-protected private area includes up to date audit reports and auditor qualification documents and is managed by certification bodies.

The FSSC Standard website lists basic details of accreditation bodies, certification bodies, certified organisations and training organisations. The FSSC Foundation has a Viasyst database which is updated by certification bodies for auditor qualification and audits.

The ISO 22000 Standard does not have any such specific database.

## **COMPLIANCE PROGRAMME**

An effective compliance programme is necessary to maintain the quality, consistency and integrity of the certification process for the confidence and assurance of customers. A compliance programme covers sites, auditors and certification bodies.

Accreditation of a certification is required, so accreditation bodies verify the systems of certification bodies, including auditor qualification and periodical witness audits.

BRC Global Standards and Foundation FSSC 22000 also carry out site audits, complaint investigations, and feedback surveys and have KPIs (Key Performance Indicators) as a part of their compliance programmes.

ISO 22000 has not implemented any such compliance programme at the time of writing.

## REQUIREMENTS WHICH ARE PART OF THE BRC GLOBAL STANDARD FOR FOOD SAFETY BUT ARE NOT INCLUDED IN FSSC 22000 AND ISO 22000

CLAUSE NUMBER	REQUIREMENTS
1.1.4	Monthly meeting programme to address food safety, legality and quality issues
1.1.7	Site to have copy of the Standard
1.1.8	Planning of the announced recertification audit in the 4-week period before the audit date
1.1.9	Most senior production or operations managers on site shall participate in the opening and closing meetings of the audit
1.2.1	The company shall have an organisation chart demonstrating the management structure
2.1.1	Multi-disciplinary food safety team includes those responsible for quality/technical, production operations and engineering
3.4.4	Monthly programme of documented inspections to ensure that the factory environment and processing equipment is maintained in a suitable condition
4.3.5, 4.3.6, 4.3.7	Risk zoning requirements
4.4.4	Map of drain in high risk and high care zones
4.13	Management of surplus food and products for animal feed
5.1	Product development
5.3.7	Process validation in case a claim is made regarding allergens
5.4.4, 5.4.5, 5.4.6	Claims and chain of custody
5.5	Product packing
5.6.1.3	Ongoing shelf life assessment
5.6.2.4	Reliability of test results
6.1	Control of operation
6.2	Labelling and pack control
6.3	Quantity weight, volume and number control
7.1.2	Training of the personnel involved in the critical control points
7.2.4	Cross check of metal detectable plasters by metal detectors
Frequencies prescribed is	Monitoring of objectives, management review, HACCP review, audit programme throughout the year, inspection of infrastructure, review of the risk assessment of suppliers, traceability trials, and mock recall test.

Figure 4 (Above table prepared considering additional requirements of FSSC 22000 scheme Part II, version 4.1: July 2017, which will be audited from January 1st, 2018)



## REQUIREMENTS WHICH ARE MORE DETAILED IN ISO 22000 THAN IN THE BRC GLOBAL STANDARD FOR FOOD SAFETY

CLAUSE NUMBER	REQUIREMENTS
5.6.1	External communication
5.6.2	Internal communication
7.5	Establishing the operational prerequisite programmes
8.5.1	Continual improvement

Figure 5

## REQUIREMENTS WHICH ARE MORE DETAILED IN ISO TS 22002-1 THAN IN THE BRC GLOBAL STANDARD FOR FOOD SAFETY

CLAUSE NUMBER	REQUIREMENTS
4.2	Environment and periodical review of potential contaminants
5.3	Wall floor junction to be rounded
5.6	Assessment and control of vending machines
6.2	Supply of chlorinated water
6.3	Boiler chemicals
6.4	Air quality and ventilation
6.5	Compressed air and other gases
7.3	Waste disposal – minimum daily removal
8.2	Hygienic design of equipment
12.6	Eradication
13.4	Workwear and protective clothing (partly)

Figure 6

## REQUIREMENTS WHICH ARE MORE DETAILED IN THE BRC GLOBAL STANDARD FOR FOOD SAFETY THAN IN ISO 22000 AND FSSC 22000

CLAUSE NUMBER	REQUIREMENTS
3.5.1	Management of suppliers of raw materials and packaging
3.5.4	Management of outsourced processing
3.9	Traceability
4.2	Customer focus and communication
4.8	Security
4.9	Staff facilities
4.10	Chemical and physical contamination control
4.11	Foreign body detection and removal equipment
4.14	Housekeeping and hygiene
5.3	Pest control
13.4	Management of allergens

Figure 7

## CONCLUSION

The scope of the BRC Global Standard for Food Safety is focussed on food processing and has separate Standards to deal with other segments like packaging, retail, transport and storage, whereas ISO 22000 and FSSC 22000 have covered a wider scope in a single Standard.

Management system requirements of the FSSC Standard and ISO 22000 Standard are generic while the requirements of the BRC Global Standard are specific. Simple and prescriptive requirements of the BRC Global Standard are especially important for small and medium level enterprises in developing or third world countries where sites encounter challenges related to quality of resources.

BRC Global Standard scheme management has developed many training programmes and guidelines in addition to the Interpretation Guidelines (available through the BRC Participate portal and through the online BRC Bookshop) which are very useful for implementers as well as verifiers.

The ISO 22000 Standard, FSSC Standard and BRC Global Standard have placed appropriate emphasis on auditor qualification. The FSSC 22000 Standard requires auditors to be evaluated for categories and specific sectors while the BRC Global Standard has a unique way of facilitating online examinations for category qualifications.

Although desired coverage of the audit can be achieved through both process-based and traceability-based (vertical) audits, an advantage of the vertical audit, used by the BRC Global Standard, is a thorough assessment of the maturity of the system.

A compliance programme is implemented by BRC Global Standards and the FSSC Standard; however, BRC Global Standards' KPIs include an additional assessment of audit report quality, which is important as clear reports help users to better visualise real situations.

The BRC Global Standard for Food Safety is often perceived to be a tougher Standard in comparison to the FSSC 22000 and ISO 22000 Standards. Many sites that have ISO 22000 certification assume that it is easier for them to get FSSC 22000 certification. Further consultation with the sites certificated to the BRC Global Standard indicated that the BRC Global Standard is rigorous but, contrary to general perception, understanding the Standard is easier and advantageous during implementation.

The BRC Global Standard has various customer-specific modules, and effective implementation of this Standard helps businesses in qualifying for second party audits as well, as it is comparatively more aligned to customer requirements.

## **TRANSITION JOURNEY TO THE BRC GLOBAL STANDARD FOR FOOD SAFETY**

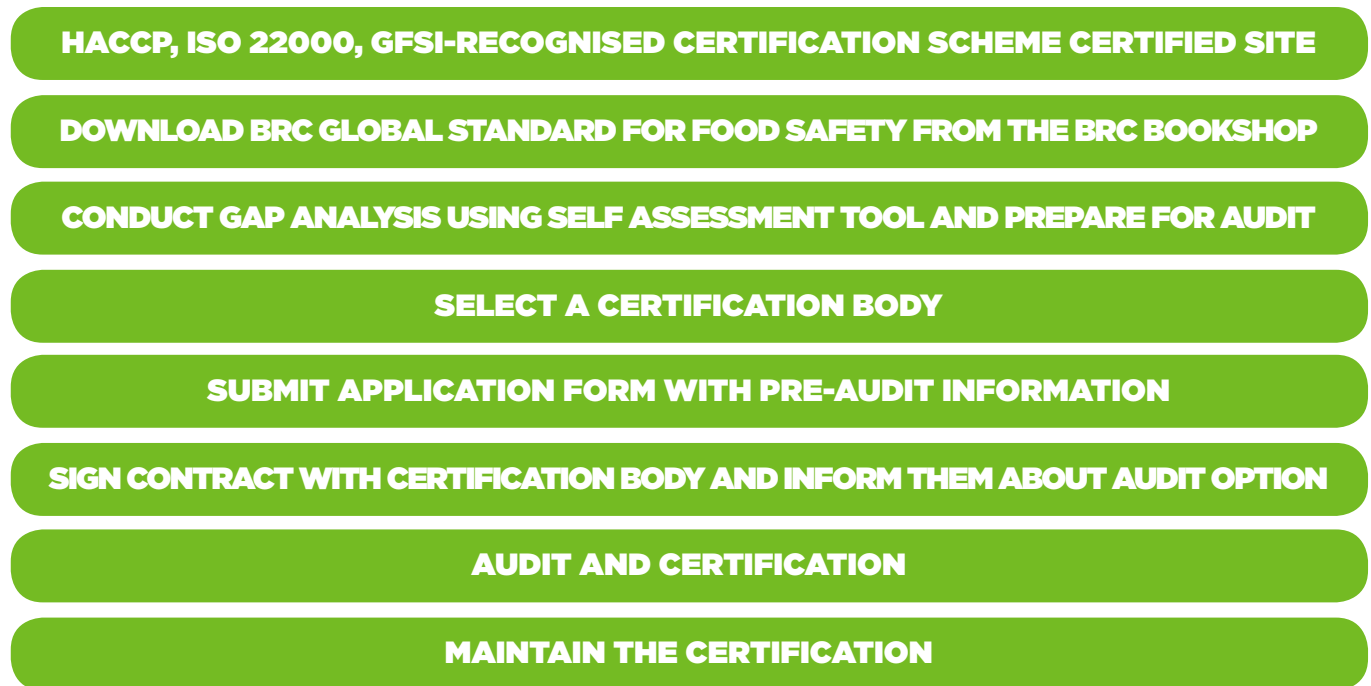


Figure 8

### **ABOUT THE AUTHOR**

Ashish Gaur is the Managing Director of Normes Decodees Private Limited. He has been professionally associated with the food industry since 1995. He has worked in management positions in the food manufacturing industry, on product development projects and leading third-party certification, and in testing and inspection (TIC) organisations such as Intertek, BV and SGS. He holds a B. Tech. in Chemical Technology (Food Technology) from Harcourt Butler Technological University (HBTU). As an auditor and trainer, he has conducted more than 2,500 audit days and trainings on ISO 9001, ISO 14001, OHSAS 18001, SA 8000, HACCP, FSMS/ISO 22000, BRC Global Standards, FSSC 22000: Food & Packaging, SQF, GlobalG.A.P., and Organic Foods. He is an Approved Training Partner and Consultant of BRC Global Standards for Food Safety, Packaging and Packaging Materials, Storage and Distribution, and Agents and Broker Standards. He lives in Greater Noida, India.



## **APPENDIX 1 – LIST OF ABBREVIATIONS AND ACRONYMS**

BRC – Brand Reputation Compliance

BS PAS 220

FSMS – Food Safety Management System

FSSC – Food Safety System Certification

FSSC 22000

GFSI – Global Food Safety Initiative

GMP

GHP

HACCP – Hazard Analysis and Critical Control Points

IEC – International Electrotechnical Commission

ISO – International Organization for Standardization

ISO 17021

ISO 22000

ISO 22002

ISO 22003

ISO 22000/FSMS

ISO/IEC 17065

ISO/TS 22002

ISO/TS 22002-1

ISO/TS 22003:2013

KPI – Key Performance Indicator

PAS

PAS 220

PAS 220:2008

PDCA – Plan-Do-Check-Act

PRP – Prerequisite Programme



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