



# Skills Framework for Career Tracks in the Food Manufacturing sector

## 1. PRODUCTION

The Production sector plays a primary role to create the food products sold to consumers. In general, it combines knowledge and skills on role and technological functionality of ingredients, food formulation and preparation with unit operations, engineering and/or technology expertise to produce food in large quantities, quickly and efficiently, safe and with the desired shelf-life.

Specific knowledge, expertise and skills, may vary from industry to industry (dairy, meat, vegetables, bakery, preserves, etc.) and also depending on the role and activity in the company.

Optional and complementary skills that are becoming relevant to promote innovation and sustainability in food production include: innovative processing and packaging, sustainability, and food waste recovery.

Main sector-specific knowledge	Transversal/soft/professional skills
<ul style="list-style-type: none"><li>• Unit Operation</li><li>• Food engineering</li><li>• Food and beverage processing</li><li>• Food sciences (chemistry, biology, enzymology, microbiology)</li><li>• Biotechnology</li><li>• Food quality</li><li>• Food safety principles</li><li>• Nutrition</li><li>• Shelf-life</li><li>• Food packaging</li><li>• Sensory analysis</li><li>• Cleaning</li><li>• Statistical analysis</li></ul>	<ul style="list-style-type: none"><li>• Problem-solving</li><li>• Team working</li><li>• Critical thinking and decision making</li><li>• Interpersonal communication</li><li>• Communication reporting</li></ul>



## 2. QUALITY ASSURANCE AND QUALITY CONTROL

Quality Assurance (QA) and Quality Control (QC) are critical functions supporting food manufacturing and innovation. They ensure consistent quality in the produced foods, guarantee products are safe to eat, and overall hygiene and cleanliness of the manufacturing plant is constantly maintained. While they look similar as both are referred to the “quality” concept, they rely on different activities and actions. In particular, QA is based on activities implemented within a specific quality management system focused on all the steps and procedures used for food manufacturing and aims at ensuring the correctness of the whole process by which a food is produced preventing defects.

QC relies on a set of activities aimed at ensuring the quality and safety of the foods by inspections and analyses carried out on the final products within a specific quality plan, to identify defects and to check the customer requirements are met.

Based on increasing pandemics and outbreaks in the food manufacturing sector due to undesired chemical contaminants and dangerous microorganisms along the production chain, QA and QC have a main role in managing non-conform food products, traceability and crisis management.

Main sector-specific knowledge	Transversal/soft/professional skills
<ul style="list-style-type: none"><li>• Food processing</li><li>• Food and beverage quality analysis</li><li>• Food safety and hygiene (HACCP)</li><li>• Microbial analysis</li><li>• Chemometrics</li><li>• Statistical analysis</li><li>• Food supply chain</li><li>• Food standards and specifications</li><li>• Certification schemes</li></ul>	<ul style="list-style-type: none"><li>• Problem-solving</li><li>• Team working</li><li>• Critical thinking and decision making</li><li>• Interpersonal communication</li><li>• Communication reporting</li><li>• Crisis management</li></ul>





### 3. RESEARCH AND DEVELOPMENT

Research and Development (R&D) combines expertise in food science, recipe formulation, food engineering, and automation. R&D in the food manufacturing sector entails aspects related to promote advancements or innovation in food processing, product, service and business.

Among them, main activities are aimed to the creation of new products or the diversification of existing products by meeting food market requirements, the design, development and optimisation of manufacturing processes to mass produce food products more efficiently and to implement innovative technologies, to translate bench-top development work into full-scale production utilizing pilot plant and plant scale-up techniques.

Main sector-specific knowledge	Transversal/soft/professional skills
<ul style="list-style-type: none"><li>• Food processing</li><li>• food safety and HACCP concepts</li><li>• Innovative technologies</li><li>• Food product design</li><li>• Statistical analysis</li><li>• Food quality</li><li>• Food nutrition</li><li>• Sensory science</li><li>• Shelf-life</li><li>• Packaging</li></ul>	<ul style="list-style-type: none"><li>• Creativity</li><li>• Problem-solving</li><li>• Team working</li><li>• Critical thinking</li><li>• Ability to work independently</li><li>• Multi-tasking</li><li>• Interpersonal communication</li><li>• Communication reporting</li></ul>





## 4. BUSINESS DEVELOPMENT

The Business Development functional track builds strategic business-to-business relationships with partners to expand into new, international markets and establishes new customer bases to sell more food products.

In this framework, main activities are focused on marketing and market development strategies, arrangements for relevant certifications, regulatory, and other, obligations required for both product export or raw materials and ingredients import.

The activities of this sector complement both the R&D and food product innovation ones by supporting the marketing strategies and identification of diversification or innovation axis and areas of investments.

Main sector-specific knowledge	Transversal/soft/professional skills
<ul style="list-style-type: none"><li>• Food regulations and legislation</li><li>• Marketing and business</li><li>• Database marketing</li><li>• Agri-food business</li><li>• Sales and trading</li><li>• Budgeting</li><li>• Data mining</li><li>• Metrics</li></ul>	<ul style="list-style-type: none"><li>• Problem-solving</li><li>• Team working</li><li>• Customer communication management</li><li>• Flexibility</li><li>• Management abilities</li><li>• Interpersonal communication</li><li>• Communication reporting</li></ul>

### Important Notes about this Document

This document is aimed to provide general information to enable individuals, employers and training providers to be acquainted on the skills for career, training and education purposes.

