

Opportunities for Life Scientists in Food Processing Companies-F&B



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Hot Tips

- *"A positive attitude causes a chain reaction of positive thoughts, events and outcomes. It is a catalyst and it sparks extraordinary results".* **Wade Boggs**
- *"Trust yourself. Create the kind of self that you will be happy to live with all your life. Make the most of yourself by fanning the tiny, inner sparks of possibility into flames of achievement".* **Golda Meir**
- *"Without continual growth and progress, such words as improvement, achievement, and success have no meaning".* **Benjamin Franklin**



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Introduction

- **A life scientist** focuses on the study of living organisms. There are many types of careers a person with this title may pursue because of the many different types of organisms to study. For example, a life scientist may focus on the study of plants, concentrate on studying animals, or work with the human immune system. Though these types of science may differ from each other, they all fall under the heading of life science; even some types of science teachers may be considered life scientists.
- In many cases, a life scientist concentrates on a highly-focused specialty rather than studying science in general. One person in this field may work as a geneticist or focus on the study of birds while another may concentrate on studying parasites. Some life scientists may choose to study a particular organ or body system while others may study cells. There are also some life scientists that study how living organisms interact with their environments while others focus on the effects medications have on human beings and animals.



Life Scientists

The **life sciences** comprise the branches of science that involve the scientific study of organisms – such as microorganisms, plants, and animals including human beings – as well as related considerations like bioethics. While biology remains the centerpiece of the life sciences, technological advances in molecular biology and biotechnology have led to a burgeoning of specializations and interdisciplinary fields.

Some life sciences focus on a specific type of life. For example, zoology is the study of animals, while botany is the study of plants. Other life sciences focus on aspects common to all or many life forms, such as anatomy and genetics. Yet other fields are interested in technological advances involving living things, such as bio-engineering. Another major, though more specific, branch of life sciences involves understanding the mind – neuroscience.

The life sciences are helpful in improving the quality and standard of life. They have applications in health, agriculture, medicine, and the pharmaceutical and food science industries.



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FOOD AND BEVERAGE PRODUCTION(F & B INDUSTRY)



Overview

Background

Structure

Industry Outlook

01

- Our ancestors lived or died according to their ability to grow food, hunt for food, or fight for food

02

- An important development in food preservation and processing was the canning process, first developed by the Parisian chef Nicolas Appert in 1810.

03

- The food and beverage industry is one of the largest areas of employment in the United States. The industry includes people who work on farms or in vineyards and for food and beverage processing companies; food- and beverage-related research laboratories

04

The food beverage and industry has changed dramatically in a very short time. Many products that formerly could only be processed by hand can now be completely processed by automated equipment, so it is possible for products to be harvested, processed, and packaged without ever being touched by human hands.



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Beyond Oil: Diversifying the Nigerian Economy

Nigerian economy is mono-cultural, depending on a single commodity—oil. Other sectors of the economy have been relegated to the background, while the management of oil revenues has proven inefficacious in driving the economy to bring about the needed level of development..



Agriculture

It creates employment more than any other sector of the economy, earns foreign exchange, provides food and food security, provides raw materials for our plants and industries. It is the basis of the Nigeria economy, and even the source of the much celebrated oil (science of oil formation).

Manufacturing

This technological process of conversion and transformation of raw materials into varying degrees and classes of goods and services for human consumption holds the ace for prosperity and national development.

Human Development

With a historical poor human index ranking as 158th out of 177 nations (UNDP 2006), Nigeria needs great investment on her population of dominantly high poverty, illiteracy, and other socio-political and economic vulnerabilities.

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Food Processing

Food processing is the transformation of cooked **ingredient**, by physical or chemical means into **food**, or of food into other forms. Food processing combines raw food ingredients to produce marketable food products that can be easily prepared and served by the consumer. **Food processing** is the set of methods and techniques used to transform raw ingredients into food or food into other forms for consumption by humans or animals either in the home or by the food processing industry. Food processing typically takes clean, harvested crops or slaughtered and butchered animal products and uses these to produce attractive, marketable, and often long-life food products. Similar processes are used to produce animal feed.

Processing Techniques

Mincing & Macerating, Poultry Processing, chopping of slicing such as diced carrots production, Removal of unwanted layers such as potato peeling, Pasteurization, Proofing, Fermentation as in Breweries ,etc

Performance Parameter

Hygiene, microbial load, Energy consumption, Minimization of waste, Rework ,Labor used, Down time , Free of Physical, Biological & Chemical Hazards, etc

Industries/Companies

Cannery, Fish/Meat processing, Food packaging, Slaughterhouse/Meat packing plant, Sugar industries, Food storage/transportation Dietary supplement, processing of Agric produce, etc

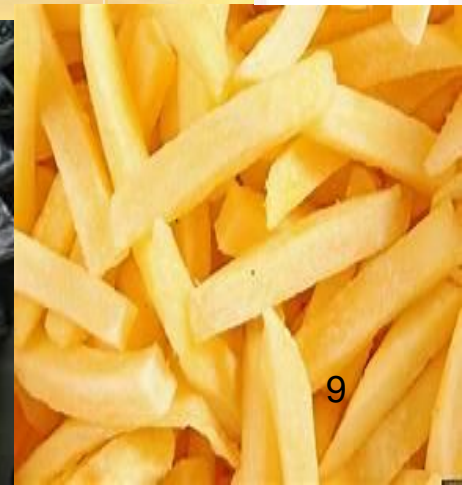
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Reputable Global Brand in F & B Industry.

1. PepsiCo, Inc
2. JBS
3. The Coca-Cola Company
4. Archer Daniels Midland Company
5. Unilever
6. Kraft Heinz
7. SABMiller
8. Lactalis
9. Kirin Holdings
10. Fonterra
11. General Mills Inc
12. Danish Crown
13. Meiji Holdings
14. Hormel Foods Corporation
15. Associated British Foods
16. Coca-Cola HBC
17. Kerry Group
18. Parmalat
19. Kirin Holdings
20. Dongge

1. Time saving
2. Offers products that meets different needs.
3. Toxin removal, preservation, etc
4. Transportation of delicate perishable foods across long distances in controlled condition.
5. Improves quality of life for allergy sufferers, diabetics, etc
6. De-activating/ denaturing of spoilage and Pathogenic organism.
7. Business for modern Supermarkets/ Restaurants.



OPPORTUNITIES/ROLES OF LIFE SCIENTIST IN FOOD PROCESSING COMPANIES.



Life Scientists are needed at all stages of modern food production. They are required along the entire **value chain** in food processing, **FARM TO FORK**.

In fact, the food processing industry is the largest manufacturing industry in the United States, employing **more than 14 million** people and accounting for **20 percent** of the gross domestic product. The vast majority of food science majors find well-paying jobs soon after graduation.

Core Tasks.

- **Test samples** from food products and production lines, isolating and identifying the microbes
- **Prevent and control** the spread of harmful microbes in the food industry
- Advise the government/organization on public health policies
- **Investigate** how micro-organisms can be used to improve and enhance the quality of food products.

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• **Regulatory Affairs.**

Available Designations-Fresh Graduate

*Laboratory Analyst /QC Microbiology Analyst

- Manufacturing Technician.
 - Quality Control Analyst.
 - Quality Technician.
 - Lab Technician.
 - Microbiology Technician.
 - Lab Testing Officer.
 - Biotech Production Analyst.
 - Operations Support Microbiologist.
 - Laboratory Associate.
- *Production Assistant.
- R & D Documentation Assistant.
 - Raw Materials Analyst. Etc.

*Animal Facilities Supervisor

*Hatchery Manager

*Ingredients Quality officer

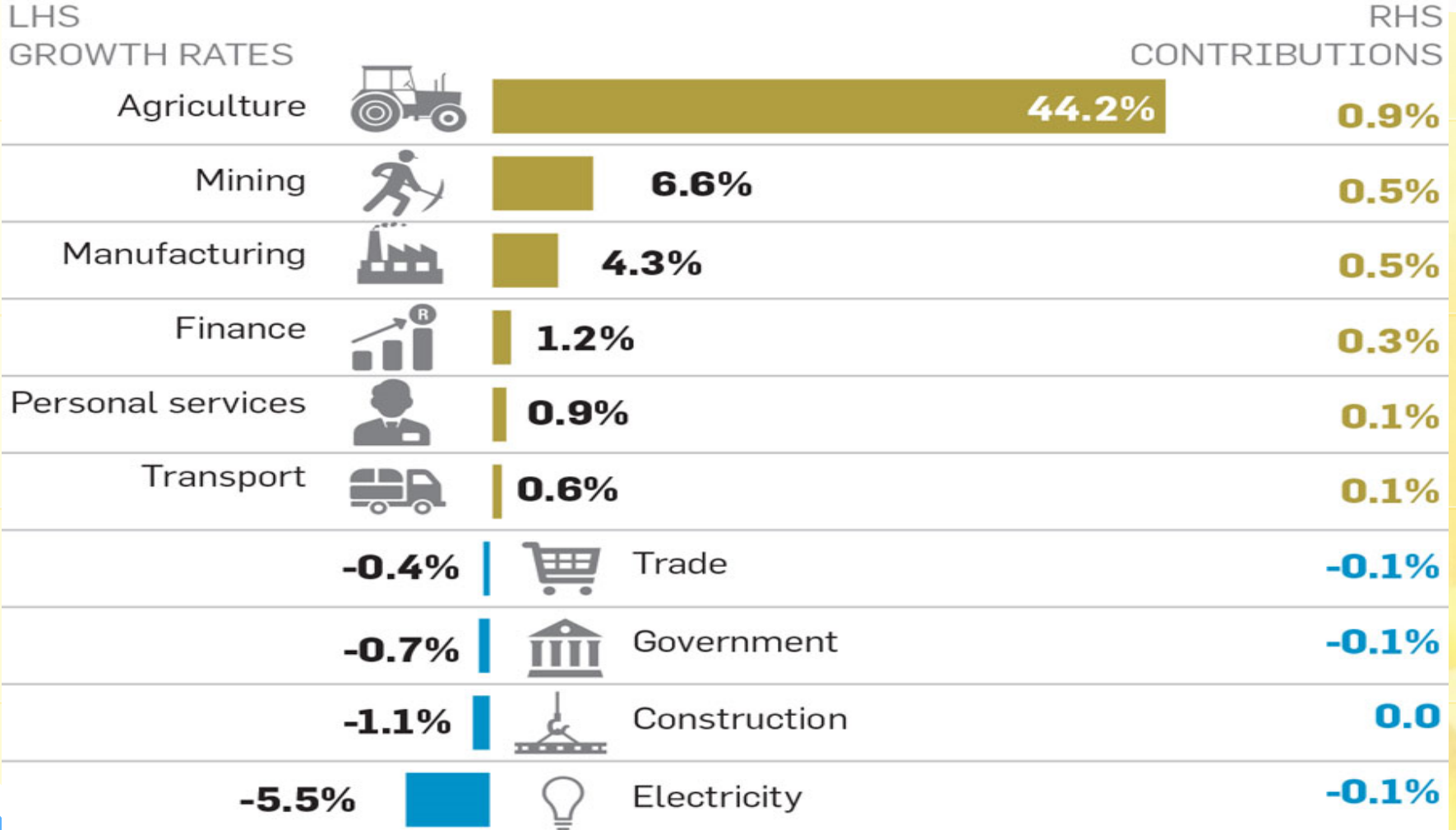
* Research Project Officer, etc



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Sector contributions to local GDP



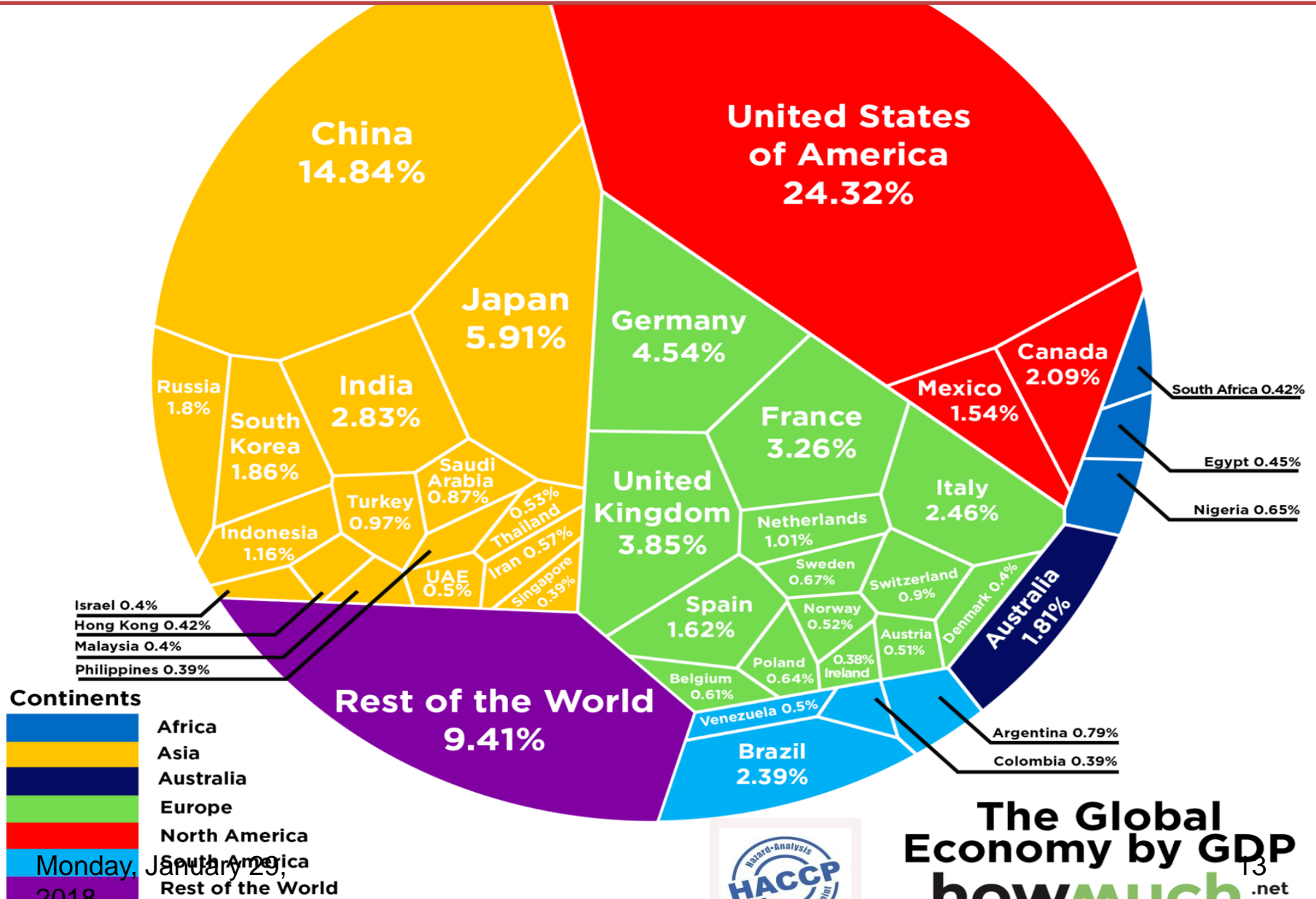
Source: StatsSA

Graphics24

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The \$74 Trillion Global Economy in One Chart



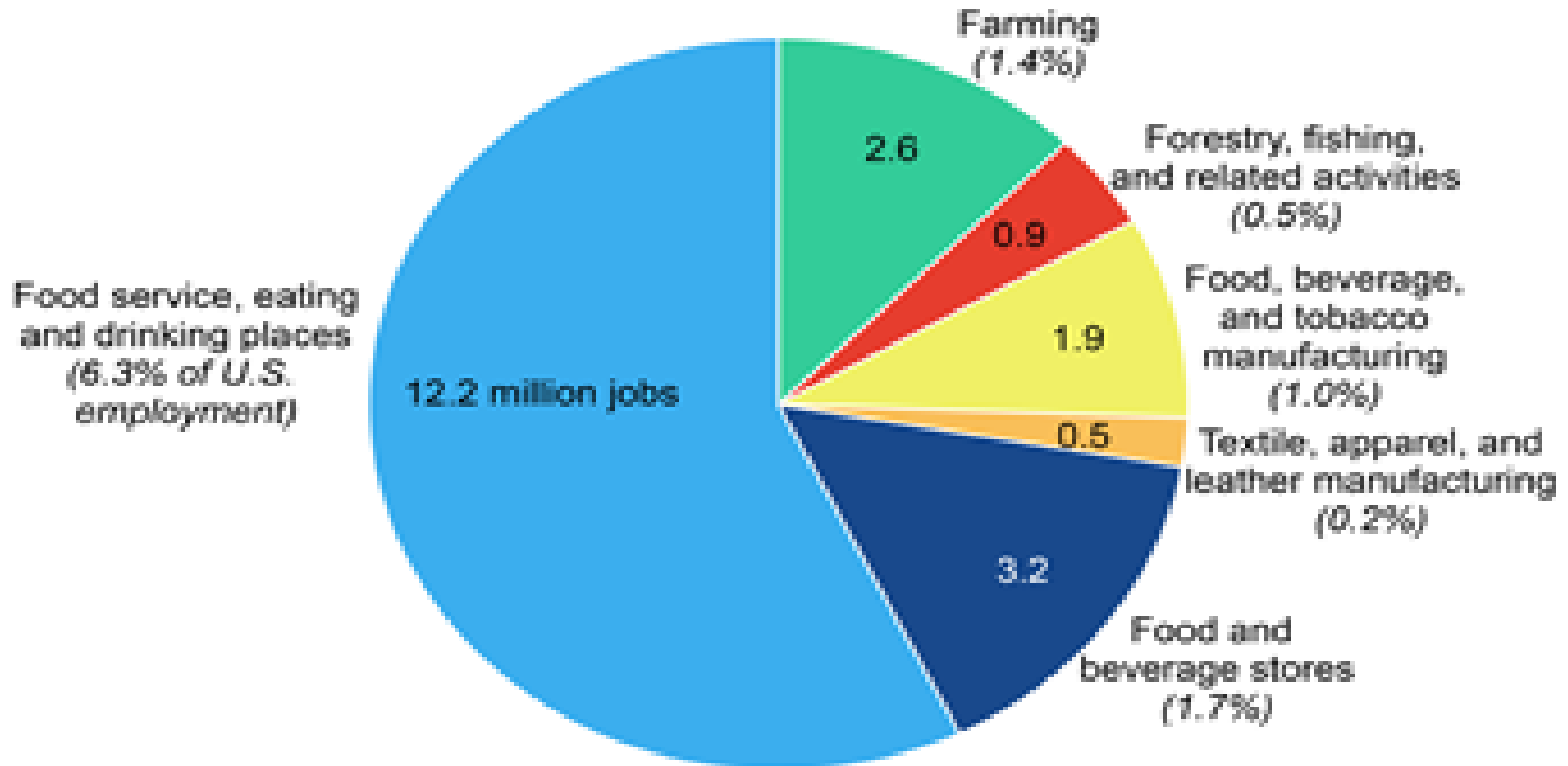
Sources: World Development Indicators database, World Bank, 1 February 2017



The Global Economy by GDP
howmuch.net

Employment* in agriculture, food, and related industries, 2016

21.4 million jobs
(11.0 percent of U.S. employment)



*Full- and part-time jobs. Categories may not sum to total due to rounding.
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of Economic Analysis. Data as of September 26, 2017.

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GDP break-down by sector (% , 2014)



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YOUR SKILLS AND THE EMPLOYMENT MARKET.

01

SCIENTIFIC KNOWLEDGE & SKILLS

Microscopy Skills,
Microbial
Identification Skills,
Ability to Organize
statistics, Lab. Skills,
Communicate
scientific Concepts,
Experimental results
& Analytical
arguments Skills,

02

INDUSTRIAL SKILLS.

Organizational
Skills,
Communication
Skills, Problem
Solving Skills,
analytical Skills,
Computer Skills,
Negotiation Skills

03

TRANSFERABLE SKILLS

Team work Skills,
Leadership Skills,
Communication
Skills, Personal
Character

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Personal Development and Affiliation to reputable Professional bodies-taking strategic certifications to enhance your relevance to the industry ad ensure and to ensure you are continuously adding value . Examples:

- ❑ America society for Microbiologist-ASM.
- ❑ National Institute of Food Science and Tech. of Nig-NIFST
- ❑ Association of Industrial Microbiologist of Nigeria-AIMN
- ❑ Institute of Public Analyst of Nigeria-IPAN.
- ❑ Chartered Institute of Environment and Health-CIEH
- ❑ Global Food service Institute -GFI
- ❑ America Society for Quality-ASQ, etc

@ Career Mentoring -Mentor & Mentee relationship.



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Quality Assurance/Quality Control-Difference

- **QA** is a set of activities for ensuring quality in the processes by which products are developed. QA aims to prevent defects with a focus on the process used to make the product. It is a proactive quality process. Establish a good quality management system and the assessment of its adequacy. Periodic conformance audits of the operations of the system.
- **QC** is a set of activities for ensuring quality in products. The activities focus on identifying defects in the actual products produced. QC aims to identify (and correct) defects in the finished product. Quality control, therefore, is a reactive process. Finding & eliminating sources of quality problems through tools & equipment so that customer's requirements are continually met.



MOVING HIGHER AS A MICROBIOLOGIST, THE BELOW STATUS ARE OPPORTUNITIES THAT AWAITS YOU.

Food safety and quality managers typically make sure that all regulatory guidelines and requirements regarding food safety are followed. The manager may work in a variety of industries, including food-manufacturing facilities, food corporations, or food warehouses. The food safety and quality manager is responsible for ensuring workers handle, process, and package food according to government food standards. Other duties may include conducting safety audits, teaching employees or clients about food safety, solving problems, and responding to safety emergencies.

Food safety and quality managers may work on their feet in noisy or cold factory conditions. Professionals may also work around animal by products. Managers are likely to work regularly scheduled, full-time hours. They should have effective organizational skills, problem solving abilities, a familiarity with food safety regulations and guidelines, and the ability to work with minimal supervision. *Payscale.com* found that quality control managers as a group earned a median annual salary of \$64,848 in 2016.

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- Quality Control Executive.
- Quality Control/Assurance Manager.
- Compliance Manager.
- Regulatory Affairs Manager
- Director of Quality Assurance.
- Quality Assurance Lead/Head.
- Executive Director, Quality Assurance.
- Director of Quality.
- Snr QA Director.
- Regional food Safety Manager.
- Quality and Food Safety Manager
- Quality Control Inspector.

- Quality Food Safety & Sanitation Manager.
- Quality Assurance & Food safety Specialist.
- Director, Global Brand Quality.
- Quality Lead Auditor.
- Director, Quality New Product Development.
- Quality Control Director.
- Director , Quality/Regulatory Affairs.
- Regional Quality Manager.
- Global Quality Manager.
- Global Quality & Food Safety Manager of internal & External Auditing.
- Vice President, Quality Assurance.
- GM Quality/Food Safety.



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Higher Skills.

Auditing, Crisis Management, Customer support, DC Management, Project designing, Documentation, Liaising with Government officials, Human Resources Management, Product/Process/System Inspection, Negotiating with vendors/suppliers, Excellent Communicator, New Product Development, Process optimization/validation/verification, Packaging Management, policies development, Quality assurance, Scheduling, Six Sigma, SOP, SPC, Product formulation/specification, Team player, Total Quality Management, Supervision & Training, etc



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Salary Insight

Salaries for microbiologists can range from \$20,000 per year to more than \$100,000 per year. Beginning microbiologists with bachelor's degrees can expect to be closer to the \$20,000 range, while those with doctoral degrees can expect to earn about \$40,000 per year until they have gained experience in practice.

The salaries for microbiologists usually increase quickly with time, but those with higher degrees have a better chance of earning a higher salary. The median salary for a beginning microbiologist with a Ph.D. in 2015 was \$38,810 per year, while the median salary for a microbiologist with **five to eight years of experience** was \$76,230.



Conclusion...

- *"Success is not something you pursue, but something you attract by the person you become"*
- *"Formal education will give you a living while self education will give you a fortune"*
- *"If you stop growing, you start dying" **Jim Rohn***



Resources/Associations/References.

1. **Beverage Industry Today**, 1025 Connecticut Avenue, Suite 1000, Washington, D.C., 20036-5405. Tel: (800) 883-2055, Tel2: (202) 540-8337, <http://beverages.einnews.com/>
2. **Journal of Management and Strategy**, ISSN 1923-3965 (Print) ISSN 1923-3973 (Online), <http://www.sciedu.ca/journal/index.php/jms/article/view/3171>
<http://www.opinionnigeria.com/diversifying-the-nigerian-economy-pathway-to-achieving-economic-stability/#sthash.1ERSbQQs.dpbs>
3. Azam Ali, Sue, et al. 2003. *Small-Scale Food Processing: A Directory of Equipment and Methods*. London: ITDG Publishing. ISBN 1853395048.
4. Desrosier, Norman W. 1970. *The Technology of Food Preservation*, 3rd edition. Westport, CT: AVI Pub. Co. ISBN 0870550667.
5. Fellows, P.J. 2000. *Food Processing Technology: Principles and Practice*, 2nd edition. Woodhead Publishing in Food Science and Technology. Cambridge: Woodhead Pub. ISBN 0849308879.
6. Karmas, Endel, and Robert Samuel Harris. 1988. *Nutritional Evaluation of Food Processing*, 3rd edition. New York: Van Nostrand Reinhold. ISBN 0442247621.
7. Bureau of Labor Statistics US, <http://www.aboutbioscience.org/careers/microbiologist> 8.
8. http://www.newworldencyclopedia.org/entry/Food_processing, https://en.wikipedia.org/wiki/Food_processing
9. <http://www.vault.com/industries-professions/industries/food-and-beverage-production.aspx>
10. https://en.wikipedia.org/wiki/List_of_life_sciences

External links

All links retrieved April 18, 2017.

- [Food Processing Magazine and Informational Website.](#)
 - [Hyfoma Food processing and manufacturing knowledge Portal.](#)
 - [Institute of Food Technologists.](#)
 - [Food Processing Technology.](#)
 - [Association of suppliers to the global food, beverage and pharmaceutical processing industries.](#)
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Thank You!



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