

A report by Beyond 2030 on future skills needs in the York, North Yorkshire and East Riding Local Enterprise Partnership Area

More Developed Area: York and North Yorkshire

Food and Drink Manufacturing: Manufacture of Food

A report completed on behalf of Calderdale College as part of the College's 2017-18 ESF funded Skills Support for the Workforce programme across the York, North Yorkshire and East Riding Local Enterprise Partnership Area.

August 2017.

1 Introduction

The EU's Cohesion policy aims to reduce economic and social disparities at regional level across the EU. Consequently, the European Commission has three categories of regional funding:

- **Less Developed regions**, whose GDP per capita is below 75% of the EU average.
- **Transition regions**, whose GDP per capita is between 75% and 90% of the EU average.
- **More Developed regions**, whose GDP per capita is above 90% of the EU average.

Within the YNYER LEP, York and North Yorkshire at nearly 98% GDP per capita is considered a More Developed Area (MDA), while East Riding at 83% is considered a Transition Area (TA) (Eurostat, 2016).

This report considers the manufacture of food within the More Developed Area (MDA) of York and North Yorkshire.

1.1 York and North Yorkshire MDA

North Yorkshire covers an area of 8,654 square kilometres (3,341 sq mi), making it the largest county in England. The majority of the Yorkshire Dales and the North York Moors lie within North Yorkshire's boundaries, and around 40% of the county is covered by National Parks.

York and North Yorkshire is divided into a number of local government districts: Craven, Hambleton, Harrogate, Richmondshire, Ryedale, Scarborough, Selby and the City of York.

It has a resident population of 809,200, which equates to 71% of the LEP's resident population (ONS, 2017). Nearly 380,000 individuals are employed in the area. Employment rates stand at 81.9% for North Yorkshire and 78% in York compared to LEP average of 79.9% (Table 1).

Using YNYER LEP as the standard, we can see various differences in the productivity, skills and employment across North Yorkshire and York. Table 1 highlights where the area performs better (green) or worse (red). For example, self-employment in North Yorkshire stands at 14.1% - greater than within York, the LEP as a whole and the English average. However, the number of individuals qualified to level 4 or above is lower and the proportion with no qualifications is greater in North Yorkshire.

Table 1 Productivity, skills and jobs:

Measure	North Yorkshire	York	YNYER LEP	England
Gross Weekly pay full time (£)	£475.40	£505.40	£504.70	£544.20
Job density (the ratio of total jobs to population aged 16-64.	0.96	0.85	0.86	0.84
Employment Rate	81.9%	78.0%	79.9%	75.0%
Self-Employment	14.1%	9.6%	12.2%	10.6%
Full-time workers	63.1%	62.7%	63.8%	69.1%
Unemployment Rate	2.3%	3.2%	3.0%	4.7%
Economically Inactive	16.1%	18.8%	17.6%	21.2%
Level 4+	35.9%	42.7%	37.5%	37.9%
No Qualifications	6.5%	6.2%	6.3%	7.8%

Source: Office for National Statistics: LEP and National Labour Market Profiles; GVA for Local Enterprise Partnerships

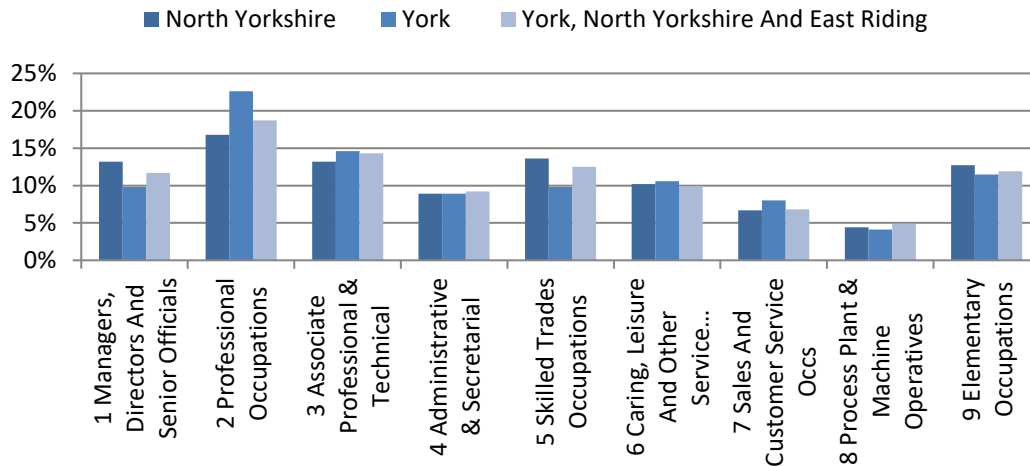
As previously mentioned nearly 380,000 individuals work across the York and North Yorkshire area. The largest employment sectors are (ONS, 2015):

- Health and Social work, employing 13% of all workers.
- Accommodation and food services, employing 11% of all workers.
- Retail, employing 10% of the workforce.

The occupational profile across York and North Yorkshire has some variations compared to the LEP and national data (Figure 1). For example:

- There are more managers in North Yorkshire - 13% compared to 10% in York and 12% at a YNYER LEP level.
- Nearly a quarter (23%) of the workforce are professional occupations in York, compared to 17% in North Yorkshire.
- North Yorkshire has more skilled trade personal than York (14% compared to 10%).

Figure 1 Employment by broad occupation (Jan 2016 - Dec 2016)



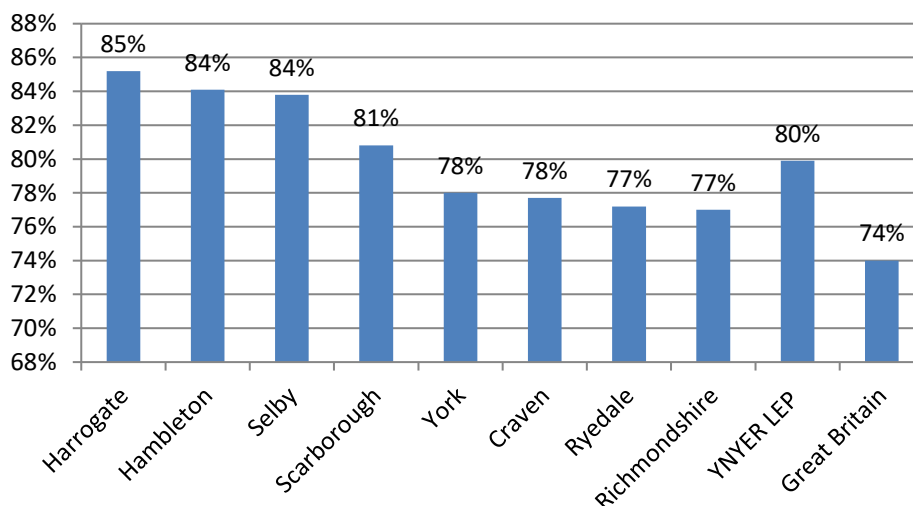
Source (ONS, 2017)

1.1 Local Authorities

The York and North Yorkshire MDA is made up by a number of local government districts: Craven, Hambleton, Harrogate, Richmondshire, Ryedale, Scarborough, Selby and the City of York.

Looking in more detail at Local Authority level, we can see that there are variations in the employment rate: Harrogate has the highest at 85% while Richmondshire has the lowest at 77%. However the employment rate in all local authorities is greater than the national average (Figure 2).

Figure 2 Employment rate across the LEP and North Yorkshire Local authorities



Source (ONS, 2017)

Using YNYER LEP as the standard, additional variations in the job, skills and productivity levels of each of the local authorities are highlighted in the table below. Where the area performs better, we have highlighted this in green with relatively poor performance being highlighted in red in Table 2.

In summary:

- Four authorities have a lower weekly wage than the LEP average (Craven, Hambleton, Ryedale and Scarborough).
- In three authorities the job density is above one - meaning that there is more than one job for every resident aged 16-64. These are Craven, Harrogate, and Ryedale. However Craven and Ryedale employment rate is lower than the LEP average.
- Self-employment is particularly high in Harrogate and Scarborough and also in Scarborough, the proportion of full-time workers is low.
- The proportion of workers with a level four qualification ranges from 23.5% in Hambleton to 50.4% in Craven.

Where the local authority area performs better than the YNYER standard we have highlighted this in green, or worse in red.

Table 2 Productivity, skills and jobs by local authorities in York and North Yorkshire MDA

	Craven	Hambleton	Harrogate	Richmondshire	Ryedale	Scarborough	Selby	York	YNYER LEP	England
Gross Weekly pay full time (£)	£413.10	£496.80	£535.50	£507.20	£443.10	£460.30	£549.40	£509.60	£504.70	£544.70
Job density (the ratio of total jobs to population aged 16-64.	1.16	0.98	1.06	0.8	1.02	0.93	0.73	0.85	0.86	0.84
Employment Rate	77.7%	84.1%	85.2%	77.0%	77.2%	80.8%	83.8%	78.0%	79.9%	75.0%
Self-Employment	*	14.7%	19.2%	*	12.7%	18.0%	*	9.6%	12.2%	10.6%
Full-time workers	60%	65%	61.5%	62.5%	69.9%	58.5%	68.6%	62.7%	63.8%	69.1%
Unemployment Rate	3.2%	2.8%	2.7%	2.8%	3.3%	3.7%	3.8%	3.2%	3.0%	4.7%
Level 4+	50.4%	23.5%	42.9%	25.3%	36.8%	37.5%	31.0%	42.7%	37.5%	37.9%
No Qualifications	*	9.1%	*	*	*	7.4	8.9%	6.2%	6.3%	7.8%

(ONS, 2017) * data not available, sample too small

1.2 Emerging developments in York and North Yorkshire MDA

The York and North Yorkshire area is not standing still. Improvements in transport, infrastructure, and housing continue to attract employers and business opportunities. Speaking with stakeholders we understand that each local authority has or is in the process of updating Local Plans and Investment Strategies. For example, Hambleton Inward Investment Strategy and Action Plan has just been published, with the aims to attract quality jobs to the district by looking at its unique selling qualities and how they can be recognised nationally. The initial focus will be on potential employment sites around Leeming Bar. The plan will look at the land, skills, support and opportunity the area has to offer investors, ensure a sufficient supply of good quality sites over the next five years, and encourage links between existing and potential new businesses in the area. It will also promote the creations of centres of excellence in some sectors.

Examples of growth, investment and development in the area includes:

The Fitzwilliam Malton Estate has received planning to change a vacant unit in Malton to form a gin or vodka distillery. This will include a retail area and office space. In addition the Estate is seeking permission for a new restaurant in Malton, an area being marketed as the 'Food and Drink' capital of Yorkshire,

Al Khaleej International is looking at a site next to the Allerton Park waste incinerator, near the A1/A59 junction for a new sugar beet processing plant. The company has asked Harrogate Council planners for environmental opinions before it puts in a full planning application. If the new plant goes ahead, the company claims it would create employment for 200 to 300 jobs, and would buy sugar beet from 3500 farmers mainly across the North East of England (Prest, 2017).

Sirius Minerals PLC is seeking to become a leading producer of multi-nutrient fertilizer and current focus is the development of North Yorkshire Polyhalite project. Located 3.5km South of Whitby, the project will involve the extraction and granulation of the mineral. The project involves the construction of an underground mine, along with the necessary infrastructure above and below grounds that will be necessary for transporting processing and distributing the minerals. The project is expected to deliver 2,500 direct and indirect jobs (Sirius Minerals PLC, 2017).

Covance, a global drug development business, currently based in Harrogate where more than 1,000 people are employed, are expanding on the National Agri-Food Innovation Campus, at Sand Hutton near York. Opening in late 2017, the laboratory extension in York will employ up to 30 scientists (Knowlson, 2017).

ACM Global Laboratories, a medical diagnostic testing company, has added a second specialised building to its laboratory block in Hospital Fields Road, York. The jobs generated will be high tech and include laboratory scientists, life sciences project managers, quality assurance professionals and data managers (York Press, 2017).

Furthermore in York, York Central - a 72 hectare site formed mainly of former railway land behind the station - could see the development of thousands of new homes and enough office space for 7,000 new jobs (City of York Council, 2017).

Near Whitby, a new 60-lodge holiday could be built on a hotel estate. The Classic Lodges hotel group has submitted an application to build a holiday park on its estate at Grinkle Park, following two years of extensive planning and consultation with the relevant authorities (Copeland, 2017). The development would see the restoration of the hotel's Grade II listed stable block, the re-introduction of a derelict caravan site, and the formation of two new lakes to complement the existing water feature. The lodges would be created in an environmentally considerate way and are aimed at the 'staycation' market of families who prefer to holiday in England than abroad. In addition to the construction jobs, once fully operational, the lodge park would create 25 jobs.

Discussions with Selby District Council highlighted a number of planning applications, including housing applications, the construction and operation of a combined cycle gas turbine (CCGT) power station, While Harworth Group Plc has recently secured the resolution to grant planning consent from Selby District Council to redevelop Kellingley Colliery, 151 acre site into a major new manufacturing and distribution centre, which could create 2,900 new jobs and bring investment into the region of £200m. (Bean, 2017).

Newby Wiske Hall, formerly the North Yorkshire Police's Headquarters has been sold to PGL, a company that runs educational activities for schools and young people in March 2017. PGL plan to open the site in Spring 2018 and reported that they will create more than 100 jobs, not only in instructing activities, but in catering, housekeeping, site maintenance and management roles.

The above demonstrates some of the opportunities in the area where new firms are entering and currently resident employers are expanding. These developments will have multiplier effects across the supply chains and wherever consumption occurs.

2 Manufacture of Foods in North Yorkshire

2.1 Introduction

The food manufacturing sector is very broad but can be defined as the preparation of food products ready for sale and consumption. It involves the sourcing of ingredients, processing, preservation and packaging. It also includes product research and design, taste testing and marketing.

The manufacture of food subsector can be further disaggregated into six distinct areas: oils and fats, dairy products, grain, bakery, animal feeds and other food products.

For the following report, data has been analysed using the following Standard Industrial Codes:

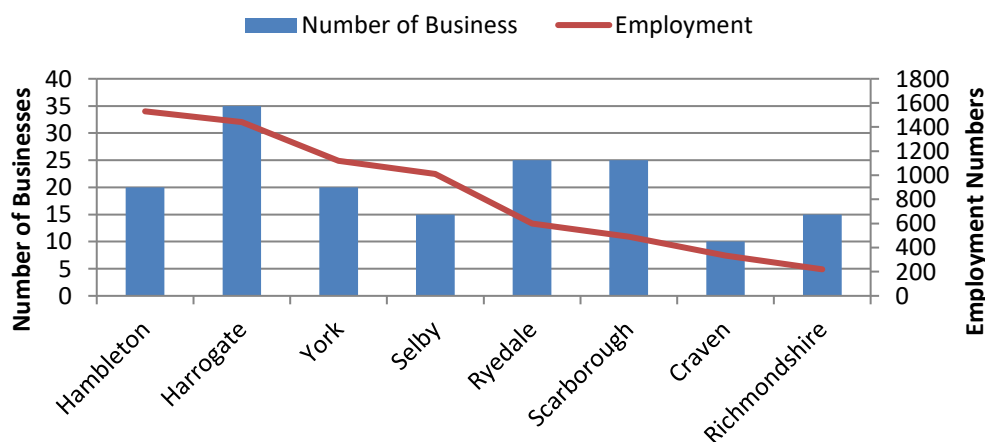
SIC	Description
10.4	Manufacture of vegetable and animal oils and fats
10.5	Manufacture of dairy products
10.6	Manufacture of grain mill products, starches and starch products
10.7	Manufacture of bakery and farinaceous products
10.8	Manufacture of other food products
10.9	Manufacture of prepared animal feeds

2.2 Manufacture of Food economy and employment

In total the York and North Yorkshire MDA has 165 businesses operating in the manufacture of food subsector, employing 6,700 individuals. The greatest employment is found within the Hambleton district, accounting for 23% of the workforce. A further 21% are employed in the Harrogate district.

Three in five (57%) businesses employ less than 10 individuals and only 4% employ more than 250.

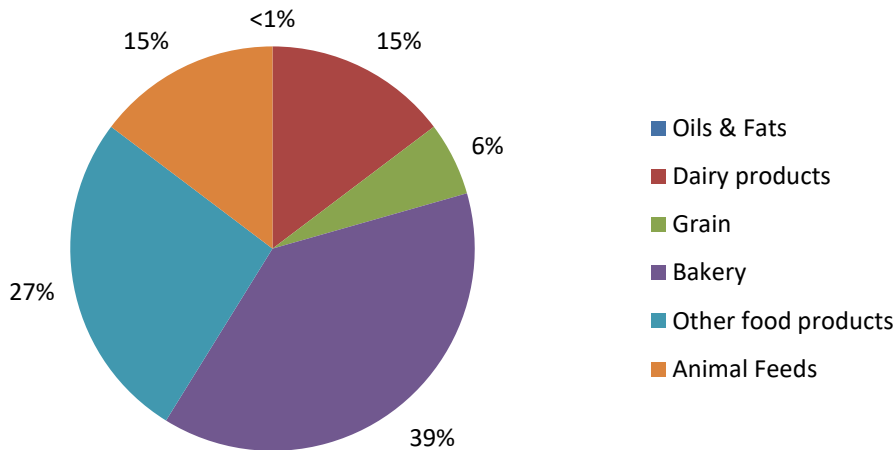
Figure 3 Distribution of food manufacturing businesses and employment in North Yorkshire



Source (ONS, 2015) & (ONS, 2016)

39% of the businesses in the North Yorkshire area are involved in the manufacture of bakery products, 27% in manufacture of other food products, such as manufacture of cocoa, processing of tea and coffee and prepared meals. The manufacture of oils and fats accounts for less than 1% of the workplaces.

Figure 4 Workplaces in the manufacture of food subsector by speciality in MDA:



Source (ONS, 2016)

Examples of establishments in each of the six industries include:

Manufacture of vegetable and animal oils and fats

- Yorkshire Rapeseed Oil, Malton www.yorkshirerapeseedoil.co.uk

Manufacture of dairy products

- The Swaledale Cheese Company, Richmond, <http://www.swaledalecheese.co.uk/>
- R and R Ice Cream, Leeming Bar, Hambleton <http://www.rr-icecream.co.uk/>
- Dales Dairies, Skipton, <http://www.dalesdairies.co.uk/>

Manufacture of grain mill products, starches and starch products

- Brecks, Selby <http://www.brecksfood.com>
- Allmet <http://www.allmet-dryers.co.uk>
- Ripon Select Foods Ltd, Ripon www.rsf.co.uk

Manufacture of bakery and farinaceous products

- The Angel's Share, Richmodshire <http://theangelssharebakery.com/>
- Auntie Anne's Castlegate Bakery, Helmsley <http://www.auntieannescastlegatebakery.co.uk/bakery>
- Stonehouse Bakery, Danby <http://www.stonehousebakery.co.uk/>
- Thomas the Baker, <https://www.thomasthebaker.co.uk>

Manufacture of other food products

- Cargill, York <http://www.cargill.co.uk/en/locations/york/index.jsp>
- Bracken Hill Fine Foods, Elvington <https://www.brackenhillfinefoods.co.uk/>
- Raisthorpe Manor Fine Foods Ltd, Malton www.raisethorpemanor.com
- Pro-Pak Foods, Malton <http://www.pro-pakfoods.co.uk>
- Malton Foods, Malton <http://www.maltonfoods.com/>
- Sarina, Leeming Bar, <http://www.sarniafoods.co.uk>
- Greencore Group, Selby <https://www.greencore.com/selby/>

Manufacture of prepared animal feeds

- l'Anson Brothers Ltd, Ripon <http://www.ianson.co.uk/>
- BATA, Amotherby Malton <http://www.bataltd.co.uk/>

The job roles which have the greatest numbers employed in the processing and preservation of food subsectors across Yorkshire and Humber are:

- Food, drink and tobacco process operatives (See Annex for more details of role)
- Packers, bottlers, canners and fillers
- Production managers and directors in manufacturing
- Chemical and related process operatives
- Sales and retail assistants
- Bakers and flour confectioners

Each industry employs a variety of roles, and from our research we have highlighted some of those found in the table below:

Table 3 Job roles found across food manufacture subsector

Oil & Fat	Dairy products	Grain	Bakery	Other food products	Animal Feeds
Head of Production	Quality Auditor	Shift Maintenance Operative	Production Director	Engineer – Electrical Multi-skilled	Nutritionist
Head of Retail Sales	Engineer stores Assistant	Laboratory Technician	Financial Director	Kitchen Assistant	Sales Manager
Market Sales	Multi skilled engineers		Sales Manager Designate	Product Development Manager	
Brand Design	Herdsman		Senior Engineering Manager	Supply Chain Assistant	
Recipe Developer			IT Manager		
			Quality Assurance Manager		
			Area Sales Manager		

2.1 Skills needs – Primary research testing the data

2.1.1 Planning for the future

Data tells us that across the LEP economy 58% of firms have a Business Plan which specifies objectives for the coming year, which is slightly lower than national findings of 62% (UKCES, 2016). 39% of firms had a training plan, again less than national average of 42%.

Our primary research highlights that employers in the subsector in the MDA frequently do not have either of the above, particularly the smaller firms. Smaller establishments are clearly focussing on operational matters, and whilst there is some understanding of the need to plan this is clearly a gap.

2.1.2 Recruitment and retention

There is a high level of recruitment demand across the food and drink manufacturing sector and this is mirrored in the manufacture of food subsector. Nationally we have seen that 22% of firms in the food and drink sector reporting at least one vacancy; greater than UK findings (19%) (UKCES, 2016).

The subsector has struggled to attract, recruit and retain qualified engineers and technicians. This is partly linked to the fact that nationally there is a shortage of engineers but also engineers are more attracted to sectors such as automotive and aerospace.

Roles being recruited were in some instances specific to the area of manufacture. For example for some firms the manufacturing processing was part of wider operations, and roles were sought across the supply chain. For example a dairy manufacturer required a herdsman as well as a maintenance engineer.

Recruitment of migrants is also common in this subsector – 41% of the workforce in the subsector was born overseas. Reasons cited for the recruitment of migrants include a lack of local labour and unwillingness of local labour to perform roles.

But it is not just recruitment; many firms also report retention issues and these appear to be worsening. In 2015, 13% of firms in the sector reported retention issues particularly for process, plant and machine operative positions – the main employment occupational in this subsector (UKCES, 2016).

R and R Ice Cream, Leeming Bar, Hambleton Vacancy

Ice Cream manufacture had several positions available in June 2017 including:

Multi-skilled Engineer; the individual would be responsible for:

- Carrying out fault finding diagnosis and repairs on mechanical, electrical, pneumatic and hydraulic equipment.
- Planned and unplanned maintenance of high-speed production machinery such as servo controlled P&P systems, filling machines, flow wrappers, check weighers, shrink and stretch wrappers etc.
- Completing all R&R maintenance tasks in house where possible.

To be considered for the Multi-skilled Engineer role the individual required engineering experience ideally from within the Food, Dairy or Beverage manufacturing industry.

Supply Chain and Packaging Administrator with responsibility for change management and administration of all site packaging, from initial artwork generation to site delivery. The individual will need to be customer service focused and operate at a high level of accuracy, with responsibility for the change management of all packaging updates. The individual will liaise with suppliers, supply chain and technical teams, co-ordinate the change process from artwork generation to factory delivery. Setting up article codes, checking BOM costings and ensuring all internal systems and work instructions are updated accurately and on time.

Production Operatives: working on ice cream production lines helping to achieve daily planned output. Duties include preparing and packing products, and general cleaning of the work area to maintain high standards of hygiene and cleanliness. Good attention to detail and a can do and will do attitude.

Quality Auditor: fully conversant with quality systems so that you can provide the technical support needed to all departments, to ensure food safety, quality, legislative standards and customer requirements are consistently met and managed. Possess excellent written and verbal communication skills, have a positive approach and a commitment to providing a first class customer service.

Dales Dairies

Dales Dairies also had positions available, including:

Maintenance Engineer

This role, along with the two other engineers already in place, is to oversee the general maintenance of the plant. Skills required to fulfil this role by the applicant will include pneumatic, electrical & mechanical knowledge. Specific duties will include:

- Maintain process/filling/packing equipment.
- Maintain holding tanks and ancillary equipment.
- Complete maintenance job sheets when they have been requested, sign that the work is complete and equipment safe to use.
- Adhere to on-going regular maintenance schedule.

The firm are also seeking a:

- Herdsman: a physically demanding role with a variety of duties.
- Dairy Operative: the role is physically demanding & the successful candidate will need to be conscientious & work to a high standard. Tasks include: loading/unloading vehicles, working on filling lines, wash down of dairy plant, load picking.

2.1.3 What are the current skills needs and skills gaps?

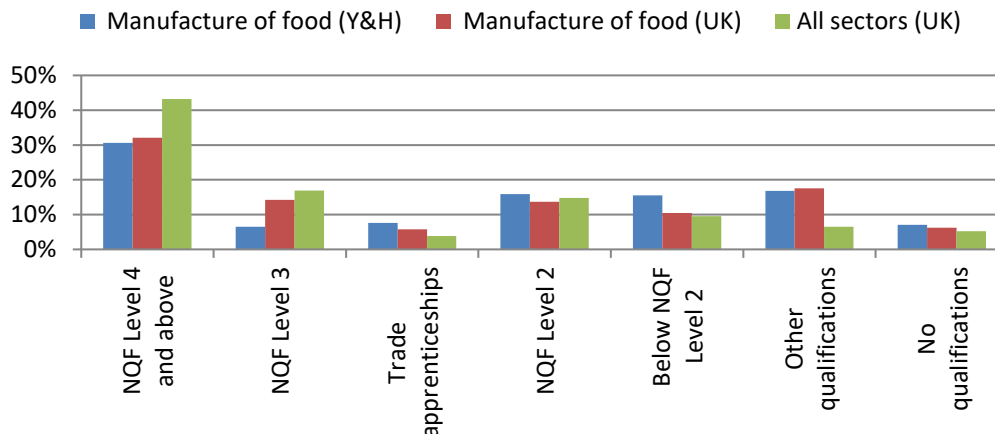
Skills levels

At a regional and national level the manufacture of food subsector has a very similar qualification profile (Figure 5).

However, the subsector does have a skill profile lower than all sector average. For example over 60% of the UK workforce has a level 3 or above qualification, while this stands at 46% across the UK food manufacture subsector.

The subsector has a much greater proportion of 'other qualifications', with nearly two in five workers classified at this level. This group captures foreign qualifications and some professional qualifications (i.e. driving) that are not defined in the other levels. The fact that this subsector has a relatively high proportion of other qualifications is most likely linked to the fact that 41% of the UK subsector workforce was born overseas (in Yorkshire and Humber region this is slightly lower at 34%).

Figure 5 Qualification levels of manufacture of food subsector



(Office for National Statistics, et al., 2016)

There is some variation of skill level within the UK subsector.

- The manufacture of dairy products is the most highly skilled area, with 76% holding a level 3 or above, with only 1% with no qualifications.
- One fifth (21%) hold a trade apprenticeship in the manufacture of grain – a much greater proportion than UK all sector where only 4% hold one.
- Less than 1% in the manufacture of dairy hold a trade apprenticeship
- The manufacture of bakery and other food has a greater proportion of elementary workers (24% and 22% respectively) than the other areas.

The largest occupational group in the subsector is process, plant and machine operatives (accounting for 36%). Both managerial positions and skilled trade occupations account for 11% each of the workforce.

Skills gaps

Across all sectors in the LEP, 15% of firms report having a skills gap - i.e. where an employee is deemed by their employer to be not fully proficient, i.e. is not able to do their job to the required level (UKCES, 2016). Overall it has been calculated that over 21,200 individuals in the LEP are not proficient in their job.

Overall 25% of firms in the national food and drink sector report having skills gaps. From our primary research, firms that report skills gaps confirmed that main causes are generally due to individual's being new to the role and their training is currently only partially completed.

These two factors are both predominantly transient: that is to say one would expect skills gaps resulting from these causes to be eliminated when staff are settled into their new roles and/or existing training has been completed.

From our primary work we can suggest that the following skills are particularly needed and valued by employers:

- Health and safety training is a necessity for many roles working in the subsector.
- Engineering and mechanical skills
- Production operatives
- For lower level positions, employers seek practical skills such as manual dexterity and a certain level of hand-eye coordination.
- Some roles are physically demanding.

2.1.4 Training

Across all sectors in the LEP, 65% of firms had funded or arranged training for staff in the previous 12 months, while across the UK food and drink manufacturing sector 70% of firms had done so (UKCES, 2016). The vast majority of training and development is targeted at initial induction training and development and statutory areas such as health and safety, and food hygiene.

Our primary research found similar findings in this area. Cost and time were the main drag factors on engaging non mandatory training,

2.1.5 Apprenticeships

Across York and North Yorkshire there has been a steady number of individuals starting an apprenticeship. In 2011/12, just 11,400 individuals started one, while by 2015/16 this had risen slightly to 11,570 (Table 7). Two in five (39%) of all starts have been within Richmondshire and 15% in York and 12% in Scarborough (DfE, et al., 2017).

The majority (70%) of apprenticeship starts were at an intermediate level. 4% were at a higher level. A quarter of all starts were by individuals under the age of 19 and 35% over the age of 25.

Table 4 Apprenticeship Programme Starts by level and age, York and North Yorkshire

Year	Total	Level (%)			Age (%)		
		Intermediate	Advanced	Higher	Under 19	19-24	25+
2011/12	11,400	75%	25%	*	31%	36%	33%
2012/13	11,520	72%	27%	1%	29%	38%	34%
2013/14	9,770	76%	22%	1%	27%	44%	28%
2014/15	12,920	76%	22%	2%	23%	45%	32%
2015/16	11,570	70%	27%	4%	25%	40%	35%

Source (DfE, et al., 2017) Apprenticeships geography data tool: starts 2011/12 to 2016/17

The most popular frameworks across the area were across the subject area of health, public services and care (49% of all starts). Business, administration and law accounted for a further 17% starts and Retail and commercial enterprise contributing 15% (Table 7).

The Food and Drink apprenticeship framework is one of 37 frameworks classified under the sector subject area of 'Engineering and manufacturing technologies'. So while we can see that 1,140 starts have been on engineering and manufacturing technologies frameworks in the MDA, it is important to note that not all of these will be on frameworks relating to this subsector.

Nationally, data reveals that there were 2,700 starts on a Food Manufacture apprenticeship in 2014/15 with the most popular pathway being Food Industry Skills, followed by Food Manufacturing Excellence (Table 5). 72% were at an intermediate level and 28% at advanced level.

In contrast to the York and North Yorkshire all sector data in which we see 35% of starts by those over 25 years of age, 62% of food manufacture apprenticeship starts are by those over 25 (Table 6).

Table 5 Apprenticeship Programme Starts by Pathway (national)

Food Manufacture pathways	2013/14	2014/15
Baking Industry Skills	500	420
Brewing Industry Skills	10	20
Dairy Industry Skills	20	-
Fish and Shellfish Industry Skills	250	220
Food Industry Skills	710	710
Food Industry Skills and Technical Management	140	350
Food Industry Team Leading	50	20
Food Manufacturing Excellence	470	460
Fresh Produce Industry Skills	190	70
Meat and Poultry Industry Skills	600	430
No Pathway Assignment	70	-

Source (DfE, et al., 2017)

Table 6 Food Manufacture Apprenticeship Starts by level and age (national)

Year	Total	Level (%)			Age (%)		
		Intermediate	Advanced	Higher	Under 19	19-24	25+
2013/14	3,010	80%	20%		12%	33%	54%
2014/15	2,700	72%	28%	-	13%	24%	62%

Source (DfE, et al., 2017)

In our primary work we explored this and the reasons will be familiar to people working in the skills sector. Whilst there is a general support for the principle of Apprenticeship, it was felt that they were often too large an intervention for this subsector. 57% of firms in this subsector employ less than 10 individuals.

The sector has apprenticeships ranging from level 2 (i.e. Food & Drink process operator) which is mainly where take-up is. However the need for higher level skills has been recognised. Consequently more advanced standards have recently been developed. For example there is now a level 5 Dairy Technologist and level 6 Food Industry Technical Professional and Food & Drink Manufacturing Manager which are seen as relevant and valuable in the subsector.

From our primary work we can see that the challenge, particularly for SMEs, in hiring apprenticeships continue to be significant. There are issues around awareness, relevance and perceived bureaucracy.

Table 7 Apprenticeship Programme Starts by district and Sector Subject Area (2015/16)

Sector Area	Craven	Hambleton	Harrogate	Richmondshire	Ryedale	Scarborough	Selby	York	North Yorkshire	MDA Area
Agriculture, Horticulture and Animal Care	20	50	30	30	40	10	20	10	200	220
Arts, Media and Publishing	-	-	-	-	-	-	-	10	10	-
Business, Administration and Law	110	200	370	160	100	300	290	460	1,520	1,810
Construction, Planning and the Built Environment	50	60	50	50	40	50	70	160	370	440
Education and Training	10	-	30	-	10	20	10	10	80	90
Engineering and Manufacturing Technologies	80	120	180	100	90	170	150	230	910	1,060
Health, Public Services and Care	70	200	380	4,000	100	330	190	410	5,270	5,460
Information and Communication Technology	-	20	30	10	10	20	10	60	100	110
Languages, Literature and Culture	-	-	-	-	-	-	-	-	-	-
Leisure, Travel and Tourism	10	20	30	10	20	40	20	30	160	180
Preparation for Life and Work	-	-	-	-	-	-	-	-	-	-
Retail and Commercial Enterprise	90	170	310	180	80	250	150	340	1,220	1,370
Science and Mathematics	-	-	-	-	-	-	-	-	10	-
Unknown	-	-	-	-	-	-	-	-	-	-
Total	440	850	1,420	4,540	490	1,190	920	1,720	9,850	10,770

Source (DfE, et al., 2017) Apprenticeships geography data tool: starts 2011/12 to 2016/17

2.2 Future requirements

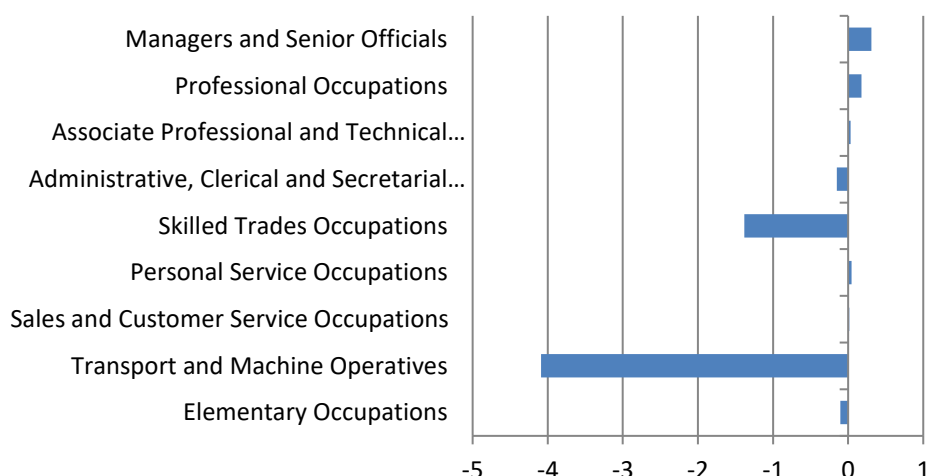
2.2.1 Sector growth

Future workforce projections for the subsector are available at the wider region of Yorkshire and Humber rather than the North Yorkshire area but this still provides a useful indication of changes in the workforce moving forward.

Employment in the Yorkshire and Humber food products manufacturing¹ subsector is expected to decline 10% between 2014 and 2024 – or by 5,000. This is in contrast to the region's all sector economy where growth of 5.5% is anticipated (UKCES, 2016).

We expect to see small employment growth for higher level occupations, including managers, professional occupations and associate professionals and technical roles (Figure 6). However, the overall number employed in plant, process and machine operative roles and skilled trades is expected to decrease.

Figure 6 Food products manufacturing occupational change, 2014 -2024 (000s), Yorkshire and Humber



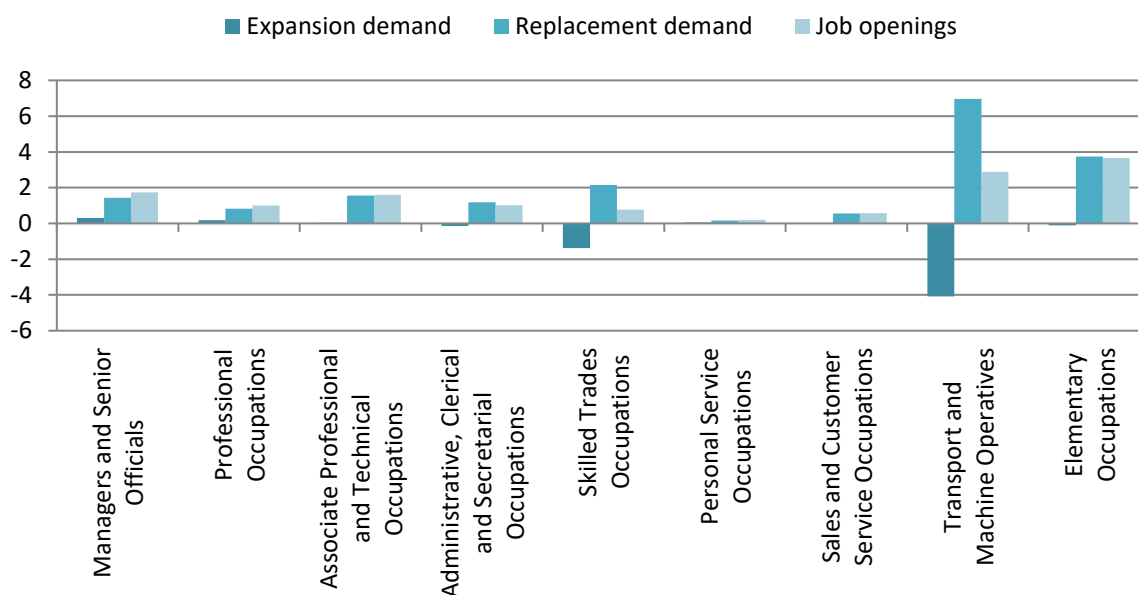
Source: UKCES Working Futures VI

2.2.2 Replacement need and total demand

Overall, the subsector in Yorkshire and Humber is expected to have approximately 13,500 job openings between 2014 and 2024: 18,500 will be replacement demand, but there will be a net sector decline of 5,000. A quarter (26%) of all job openings will be within elementary occupations and a further 21% in process, plant and machine operatives (Figure 7).

¹ The whole of SIC 10 Manufacture of food products

Figure 7 Job openings in the Food products manufacturing by occupation 2014 - 2024 (000s) in Y&H



Source: UKCES Working Futures VI

19,000 of the new staff needed to replace existing employees is largely a consequence of its older workforce. 33% of the subsector workforce are over 50 years of age.

2.2.3 Qualifications

The change in qualification levels of the workforce shows that there will be a shift towards more people holding higher qualifications (Table 8).

By 2024, 32% of people employed in the food products manufacturing subsector are expected to be qualified at level 4 and above (lower than Yorkshire and Humber region all sector proportion of 47%), whilst the proportion of people with no formal qualifications or level 1 is expected to fall to 6%.

Table 8 Change in qualification profile in the food products manufacturing subsector, Yorkshire and Humber

	No qualifications and level 1	Level 2	Level 3	Level 4 – 6	Level 7 – 8
Qualification example	GCSE (grades D – G) BTEC level 1	GCSE (grades A* – C) NVQ Level 2	AS & A level BTEC National	Certificate of higher education (L4) Foundation degree (L5) Bachelor's degree (L6)	Master's degree (L7) Doctorate (L8)
2014 level	19,469	12,415	9,854	7,966	1,251
2024 level	11,469	10,812	8,997	12,960	1,569
2014 – 2024 % change	-41%	-13%	-9%	63%	25%
2014 % share	38%	24%	19%	16%	2%
2024 % share	25%	24%	20%	28%	3%

Source: UKCES Working Futures VI

2.2.4 Future roles and skills

The above Working Future projections demonstrate that there will be limited growth across the higher occupational groups and a decline in lower skilled roles, but there will be replacement need for all positions.

Employers have not necessarily identified any new roles developing in the next 6 years; rather they expect to be recruiting for the same sorts of positions that currently exist. What is key however is that the nature of the subsector is expected to change. There is a clear expectation that this will be a sector with fewer 'pairs of hands', relying more on automation and management.

2.3 Drivers of change

2.3.1 Political

Election and Leaving the European Union

The result of the British General Election has left food and drink companies facing an uncertain immediate future, with a weak pound already increasing costs.

Uncertainty over the political situation of the UK may have an impact on the sector. It is only once the future regarding leaving the EU is clearer that companies will feel comfortable committing to long term investment programmes. Equipment suppliers are likely to be the biggest losers of this, as companies will push existing machinery to work longer and wait to see if consumer confidence remains at a level where investing in upgrades or expansions is worthwhile.

The effect on inward migration particularly from EU countries could affect the sector's ability to recruit and retain skilled staff and is by far the biggest issue employers have raised with us. This is perhaps not surprising given that 41% of the national workforce in this subsector was born overseas.

Legislation / Regulations

As with other food industries, this is a subsector which is heavily regulated, particularly in terms of food safety, quality and traceability and nutrition labelling.

Employers are not expecting there to be significant new legislation in the next few years, rather they are anticipating many current standards to simply move from EU legislation into UK law.

2.3.2 Economic

Rising Costs

The whole subsector is affected by rising operating costs. For example the increasing cost of raw products impacts on the whole sector. Consequently, resource management and budgetary controls are important.

Wage levels

The National Minimum Wage (NMW) was first introduced in the UK in April 1999 at a rate of £3.60 per hour for over 21-year-olds. Prior to that there was no statutory minimum. In April 2016 the government introduced the National Living Wage (NLW) at a level of £7.20 per hour for those over 25 years old, increasing to £7.50 in April 2017. It is expected to rise to at least £9 per hour by 2020. The impact of this is likely to be significant on this subsector.

Firms will undoubtedly face higher payroll costs and this is a significant challenge they face. The BDO Food and Drink Report (2017) states that 66% of food and drink manufactures were increasing its investment in automation. Many are doing so as a result of, or partly linked to the national living wage increases.

Labour availability

Following the recession, the economic situation across the UK and North Yorkshire has been improving. Unemployment rates in the area have declined from a high of 7.5% in 2011 to 2.3% at the end of 2016. Of those claiming JSA, 43% have been out of work for six months or more (ONS, 2017) and are therefore more of a challenge to get back into work. Consequently it is becoming harder to recruit.

Demographic changes mean that there are fewer younger people entering the job market, which has an adverse effect. Employers need to find ways to attract and then retain staff. Recruitment and retention are two important issues.

2.3.3 Social

Consumer needs

Consumers are not only concerned about the sensory characteristics of foods products (e.g. texture, flavour, aroma, shape, colour and after taste) they also pay attention to the nutritional value. In general, consumers are demanding less processed and additive-free food products than before. Thereby food processors/manufactures are seeking to develop and employ processing technologies that retain or create the desired sensory and nutritional qualities.

New product development is a massive opportunity for businesses in the near future. There are several consumer trends shaping product development, including 'free-from', health foods, vegan and plant-based foods, and niche specialities such as snacks and craft beers.

2.3.4 Technological

Driven by new knowledge and new techniques developed through research findings and by market demand, the food industry is very active in technological innovations with a track record of developing new ways of processing foods.

Alternative or novel food processing technologies continue to be explored and implemented to provide safe, fresh tasting, nutritional foods without using heat or chemical preservatives.

Automation

Automation has one of the highest impacts on the food industry with 63% having some level of automation (BDO, 2017). Some companies have been slow to adopt automation and upgrade production lines due to the downtime and retraining period needed. However, 51% of food and drink manufacturers were looking to increasing investment. This is important as we think of the future skills profiles of the sector. Increasingly manufacturers will rely on engineers and technical skills to keep a factory working rather than filling it with lots of low skilled workers.

The types of automation equipment include: refrigeration, handling and filling, automated packing and packaging, weighing, mixing, machine controls, software and remote centralised SCADA monitoring and control.

However, with automation also comes the risk of cyber-attacks. Companies embracing automation should pay close attention to cyber risk governance. Focus needs to be on security controls for both operational technology and information technology systems. User education is essential.

2.4 Key Points

What follows is a presentation of the key findings from the above.

- The subsector has 165 businesses operating in the manufacture of food subsector, employing 6,700 individuals.
- Three in five (57%) businesses employ less than 10 individuals and only 4% employ more than 250.
- The subsector has struggled to attract, recruit and retain qualified engineers and technicians
- Recruitment of migrants is also common in this subsector – 41% of the workforce in the subsector was born overseas.
- In 2015, 13% of firms in the sector reported retention issues.
- The manufacture of dairy products is the most highly skilled area, with 76% holding a level 3 or above, but less than 1% has an apprenticeship.
- One fifth (21%) hold a trade apprenticeship in the manufacture of grain – a much greater proportion than UK all sector where only 4% hold one.
- The sector is a hands on sector, with more than a third (36%) of the workforce working in a process, plant or machine operative position.
- But the sector is moving towards automisation.
- Overall 25% of firms in the national food and drink sector report having skills gaps.
- 62% of food manufacture apprenticeship starts are by those over 25

- Employment in the Yorkshire and Humber food products manufacturing subsector is expected to decline 10% between 2014 and 2024. This is a priority sector, yet it is not expected to be a growth sector.
- The nature of production is going to change, more automation, means less hands on jobs in the lower skilled roles.
- Leaving the European Union and the effect on inward migration could affect the sector's ability to recruit and retain skilled staff and is by far the biggest issue employers have raised with us. This is perhaps not surprising given that 41% of the national workforce in this subsector was born overseas.

3 Annex

Table 9 Employment by Industry in the LEP and Local Authorities

Industry	Craven	Hambleton	Harrogate	Richmondshire	Ryedale	Scarborough	Selby	York	North Yorkshire	East Riding of Yorkshire	YNYER LEP
2 : Mining, quarrying & utilities	125	500	350	225	200	200	2,000	400	4,000	1,250	5,000
3 : Manufacturing	3,000	6,000	5,000	1,000	5,000	5,000	7,000	4,500	36,000	17,000	53,000
4 : Construction	1,500	2,250	3,000	1,000	1,500	1,500	1,750	4,000	17,000	6,000	23,000
5 : Motor trades	450	900	1,750	350	700	600	500	1,500	7,000	3,000	10,000
6 : Wholesale	1,500	2,250	4,500	700	1,000	1,000	2,000	2,500	15,000	5,000	20,000
7 : Retail	3,000	3,500	8,000	2,000	1,750	5,000	2,250	14,000	39,000	12,000	51,000
8 : Transport & storage (inc postal)	1,000	1,750	3,000	600	600	1,250	3,500	4,500	17,000	6,000	23,000
9 : Accommodation & food services	3,000	3,500	8,000	3,000	3,000	7,000	2,000	11,000	42,000	9,000	51,000
10 : Information & communication	350	600	2,000	150	150	300	800	2,500	7,000	2,250	9,000
11 : Financial & insurance	2,500	450	2,500	150	350	600	300	4,500	12,000	1,250	13,000
12 : Property	450	800	1,500	400	800	1,000	300	2,000	7,000	1,750	9,000
13 : Professional, scientific & technical	1,750	2,250	8,000	1,000	1,500	1,250	3,000	8,000	27,000	7,000	34,000
14 : Business administration & support services	6,000	3,000	6,000	1,000	1,250	2,000	3,500	8,000	30,000	7,000	37,000
15 : Public administration & defence	450	3,500	2,000	800	700	1,250	700	5,000	15,000	10,000	24,000
16 : Education	3,000	3,000	7,000	1,500	2,250	3,500	3,500	12,000	36,000	12,000	48,000
17 : Health	2,250	5,000	12,000	1,500	1,750	8,000	3,000	16,000	50,000	17,000	67,000
18 : Arts, entertainment, recreation & other services	1,000	1,750	3,500	1,250	2,000	2,500	700	5,000	19,000	4,500	23,000
Column Total	31,000	41,000	80,000	17,000	25,000	43,000	36,000	105,000	379,000	122,000	500,000

(ONS, 2015)

3.1 Food, Drink and Tobacco Process Operatives

Food, drink and tobacco process operatives set, operate and attend machinery to bake, freeze, heat, crush, mix, blend and otherwise process foodstuffs, beverages and tobacco leaves.

Typical Entry Routes and Associated Qualifications

There are no formal academic entry requirements, though some GCSEs/S grades can be an advantage. Off- and on-the-job training is available. Vocational qualifications are available.

Tasks

- sets, operates and attends machinery and ovens to mix, bake and otherwise prepare bread and flour confectionery products;
- operates machinery to crush, mix, malt, cook and ferment grains and fruits to produce beer, wines, malt liquors, vinegar, yeast and related products;
- attends equipment to make jam, toffee, cheese, processed cheese, margarine, syrup, ice, pasta, ice-cream, sausages, chocolate, maize starch, edible fats and dextrin;
- operates equipment to cool, heat, dry, roast, blanch, pasteurise, smoke, sterilise, freeze, evaporate and concentrate foodstuffs and liquids used in food processing;
- mixes, pulps, grinds, blends and separates foodstuffs and liquids with churning, pressing, sieving, grinding and filtering equipment;
- processes tobacco leaves by hand or machine to make cigarettes, cigars, pipe and other tobacco products

Related Job Titles

- Bakery assistant
- Brewery worker
- Dairy worker
- Process worker (food products manufacturer)