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FRENCH REPORT OF LABOUR MARKET'S CHARACTERISTICS AND SUMMARY OF CHALLENGES AND OPPORTUNITIES.

**REPLAY-VET - *Strengthening key
competencies of low- skilled people in vet to
cover future replacement positions***

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SECTION 1. CHARACTERISATION OF THE LOW SKILLED¹ LABOUR MARKET IN FRANCE

1.1. Social and labour characterisation of population with low qualification

Analysis of the French labour market in comparison to EU 28

LABOUR MARKET BASIC INDICATORS	EU 28		FRENCH COUNTRY	
	2015	Δ 08-15 (*)	2015	Δ 08-15 (*)
Population on 1 January (000)	508 504	1,6 %	66 488	3,9 %
Population between the ages of 15-64 (%)	66%	-1,7	63%	-2,2
Total occupation (000) 15 ans et plus	220 841	-0,9%	26 424	1,9%
Employment rate(%population age group 20-64)	70,0	-0,3	69,5	-1,0
Employment rate(%population age group 15-64)	65,6	-0,1	63,8	-1,1
Employment rate(%population age group 15-24)	33,0	-4,3	27,9	-3,5
Employment rate(%population age group 25-54)	78,0	-1,4	79,4	-3,8
Employment rate(%population age group 55-64)	53,3	7,8	48,7	10,5
Full time employment rate (%population age group 15-64)	52,7	-1,5	52,1	-1,9
Self-employment (%total occupation population age group 15 et plus)	14,9	0,0	11,2	1,3
Part-time employment rate (%total occupation population age group 15-64)	19,6	2,1	18,4	1,6
Fixed term contract (%total employees age group 15-64)	14,1	0,0	16,0	1,0
Employment in tertiary sectors (%total occupation age group 15-64)	71,0	3,6	75,9	2,3
Employment in secondary sectors (industry and construction) (%total occupation age group 15-64)	24,2	-3,4	20,3	-2,9
Employment in primary sectors (%total occupation age group 15-64)	4,2	-0,5	2,7	0,0
Economic activity rates(%population 15-64 age group)	72,5	1,8	71,3	1,4
Economic activity rates(%population 15-24 age group)	41,5	-2,7	37,1	-1,4
Total Unemployment (000) population age group 15-74	22 881	37%	3 054	55%
Unemployment rate(% active population age group 15-74)	9,4	2,4	10,4	3,3
Youth Unemployment rate (%active 15-24 year group)	20,3	4,7	24,7	6,4
Long-term unemployment rates (%active population age group 15-74)	4,5	2,0	4,6	2,0
long-term unemployment (% total unemployment population age group 15-74)	48,5	11,4	44,3	7,2
Youth Unemployment rate (%population 15-24 age group)	8,4	1,5	9,1	2,1
Employment rate of the population with low qualification 15-64 years(ISCED 0-2)	43,7	-4,2	39,7	-7,5

(*)The variations are expressed in % for the number of individuals and in percentage points for the rates and proportions

Source: EUROSTAT, LFS. Données 2015, France entière

¹ In this text, still in its preliminary version, the terms “low-skilled”, “low graduated”, “low educated” are used indistinctly to describe the same concept: the share of population holding lower levels of education degrees or eventually people with any degree (ISCED 0-2). As a matter of fact, low graduated can have high professional skills (for instance acquired informally), so as highly educated workers could present skills gaps or lacks. This text doesn't have the ambition to carry out this kind of analysis, having the only goal of presenting some quantitative evidence.

France has 66,488,000 inhabitants in January 2015, which represent 13.1% of UE28 population, the Europe's second most populated country. The population has been growing at a steady pace since 2008, mainly due to its natural balance.

Its potential workforce (population between the ages of 15 and 64) is 63%, lower than in the EU28 (66 %). This potential workforce is declining (-2.2 %) at a similar pace as the whole of EU28 (- 1.7 %). In France, this decrease is due to the marked slowdown in the population aged 50 to 64 (Insee, 2016²). Despite the increase over the period 2008 - 2015 (+ 1.9 %), the total occupation represents 39.7% in France below the European average (43%).

The Employment rate amongst the age group of 20 to 64 represents 69.5% in France (down 1 percentage point between 2008 and 2015), well below the 75% target set by the Europe 2020 strategy but close to the European average (70.0%). By extending the focus to 15-64 year-olds, the employment rate still falls to 63.8%. However, the situation of workers is significantly different according to their age. The oldest age groups (55-64) have registered a sustained increase in their employment rate (+10 points since 2008), reaching 48.7% in 2015. Conversely, the employment rate of the youngest is deteriorating (-3.5 points since 2008) and remains below the European average (the employment rate of 15-24 is 27.9% in France and 33.0% in the EU28). This low employment rate of the youngest is explained in a double way.

On the one hand, the lengthening of schooling (Dares, 2011³) which leads to a smaller participation of the youngest in the French labor market. The economic activity rate of young people aged 15 to 24 is twice as low as the overall French population for all ages (37.1% and 71.3%, respectively). It is also lower than the European average (41.5%).

On the other hand, the difficulties of professional integration of young people, in particular low-graduates (Céreq, 2014⁴). The unemployment rate for young people in France has increased significantly since 2008 and reaches a particularly high level (24.7%), which is higher than the European average (20.3%). The situation is even more unfavorable for younger generations without a diploma with a "record" unemployment rate of 39.2%. In general, low level of education strongly influences situation on the labor market. So, the employment rate of the population with low qualifications (ISCED 0-2) in the 15-64 age group is 39.7% in France and 43.7 % in the EU28.

As with the European average, the part-time employment rate continues to increase over the period 2008-2015 (+1.6 points) to a level comparable to that of the EU28 (18.4% in France). The same applies to employees with fixed term contracts: their share increase to 16% in 2015, which is close to the European average. Self-employment also rose in France, but remained slightly below that of the EU28 (11.2% and 14.9%, respectively).

² Tableaux de l'économie française, Insee Références, mars 2016

³ Cette étude révèle que près de 80 % des jeunes de 18 ans étaient en cours d'études depuis les années 1990 alors que mi 1980 cette situation ne concernait que moins de la moitié des jeunes du même âge. Cf Dares 2011, « L'emploi des jeunes », Document d'études n°166, novembre 2011.

⁴ C. Barret, F. Ryk, N. Volle, « Enquête 2013 auprès de la Génération 2010. Face à la crise, le fossé se creuse entre niveaux de diplôme », Bref n°319, mars 2014.

Concerning the sectorial distribution, France is distinguished by the marked tertiarisation of its labor market (76.9% of the total occupation of the 15-64 age group), compared with the shrinking of the secondary sectors (industry and construction) and agricultural sectors.

The number of unemployed increased by 55%, well above the EU 28 level. By 2015, the unemployment rate in France is 10.4%, ie one point higher than the European average. The high level of unemployment among young people (24.7% in France and 20.3% in the EU28) reflects the specificity of the population under 25 in the labor market. The less educated are indeed over-represented (Dares, 2015⁵).

Finally, since the 2008 crisis, long-term unemployment has worsened: 44.3% of the unemployed were in this condition for more than a year, 7 points more than in 2008. The situation in France is comparable to that of observed in the EU 28 as a whole. This degradation of the labor market particularly affects the most vulnerable groups of workers, in particular the less qualified (employees and workers) and the least educated. The diploma protects against the risk of long-term unemployment even more than the risk of unemployment, all durations confused, and this more pronounced since the crisis of 2008 (J. Lê, S. Le Minez, M. Rey., 2014⁶).

1.2. Low skilled labour market characterization

Activity and occupation

For this report, the population with low qualification has been defined as those aged 15-74 with educational levels going from ISCED 0 to ISCED 2, which include preschool education (ISCED 0), primary education or first stage of basic education (ISCED 1) and first cycle of secondary education or second cycle of basic education (ISCED 2). The data used are those of 2015.

The population with low qualifications in France represents 33 % of the population (17,180,160 people). It is older than the general population (56% is at least 55 years old compared with 36% for the general population). This reflects the rapid increase in the length of studies and the rise in the graduation rate of French students between the mid-1980s and the end of the 1990s⁷. However, the proportion of young people (aged 15-24) is higher among the low graduates (18% vs 14%). Finally, the rate of feminization of the population with low qualifications is more important (56% vs 52 %).

In parallel with the demographic structure of the population with low qualifications, their participation in the labor market is lower than the population as a whole (38.9% vs. 62.5%). The labor demand effect makes their situation on the labor market more difficult: they also suffer from lower employment and occupation rates as well as higher unemployment rates.

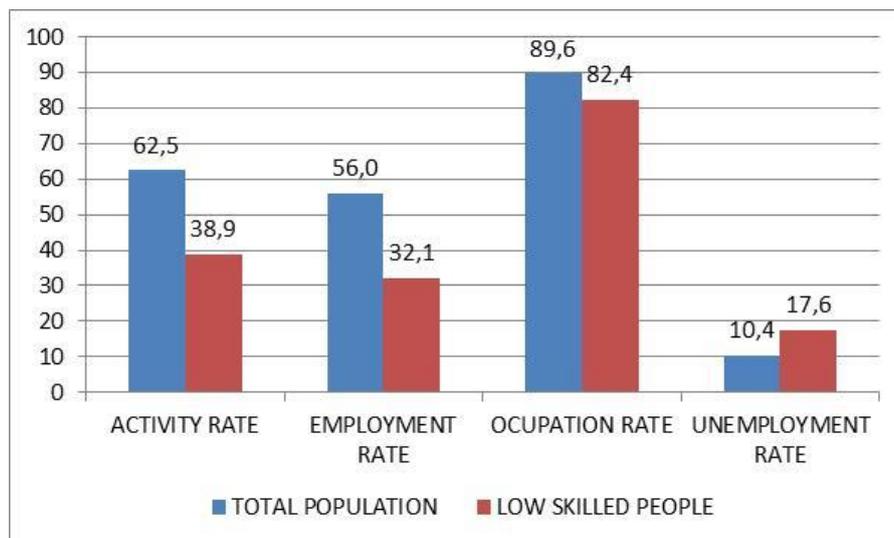
⁵ Dares 2015 « emploi, chômage, population active : bilan de l'année 2014 », Dares analyses n°050, juillet 2015.

⁶ J. Lê, S. Le Minez, M. Rey, « Chômage de longue durée : la crise a frappé plus durement ceux qui étaient déjà les plus exposés », in « France, portrait social Édition 2014 », Insee Références, novembre 2014.

⁷ Selon les données du ministère de l'éducation nationale, de l'enseignement supérieur et de la recherche en France, la proportion de bacheliers dans une génération est passée de 30 % en 1985 à 74 % en 2013.

Comparison of the labour market ratios of low skilled people in relation to the total of population

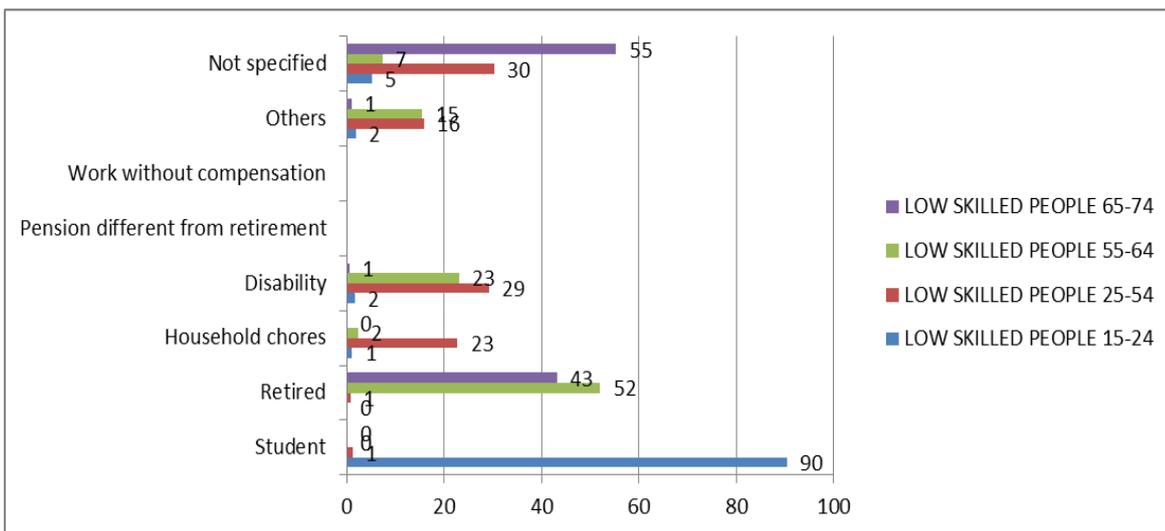
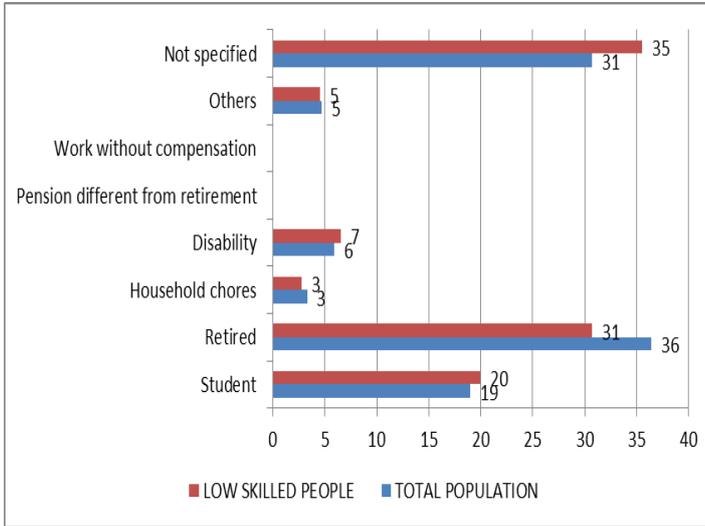
	TOTAL POPULATION	LOW SKILLED PEOPLE	≠ (low-total)
ACTIVITY RATE	62,5	38,9	-23,6
EMPLOYMENT RATE	56,0	32,1	-23,9
OCCUPATION RATE	89,6	82,4	-7,2
UNEMPLOYMENT RATE	10,4	17,6	7,2



Source: EUROSTAT, LFS. Données 2015, France entière, population âgée de 15 à 74 ans.

Low skilled population accounts for 52% of the inactive population. The age and sex structure of the inactive low graduate population is comparable to the total inactive population: 7/10 are over 55 and 2/10 between 15 and 24, 6 out of 10 inactive are women. Also, the main reasons for the aforementioned inactivity of the less qualified people do not differ from those of the rest of the population: retirements and studies are the primary causes. In all logic, regarding age groups, young people are inactive, mainly, because of studies, seniors because of retirements. Household cores and disability concern the intermediate age (25-54 years).

Main reasons for inactivity. Comparison between the total population and the low skilled population attending to sex and age

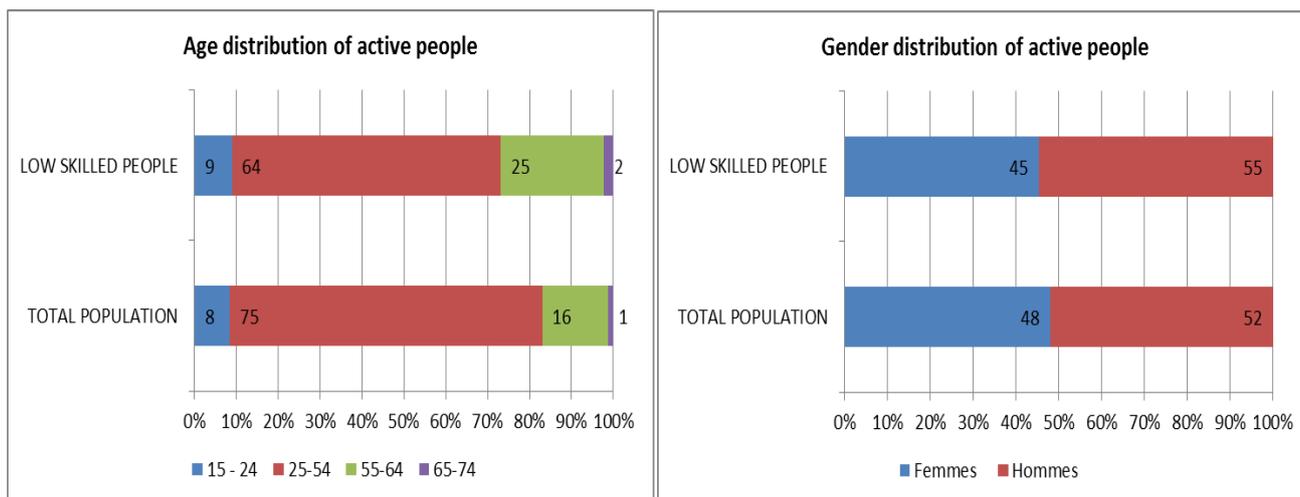


Source : Source : Insee, Enquête Emploi. Données 2015, France entière, population âgée de 15 à 74 ans.

Employment rate

Low skilled population accounts for 18 % of the active people and 16 % of the employed population.

Although very concentrated on the intermediate age group (64% of low-skilled workers are between 25 and 54 years of age), the low graduate active people is older than the average workforce and less feminized. The same applies to the working population.



Source: Source : Insee, Enquête Emploi. Données 2015, France entière, population âgée de 15 à 74 ans.

Due to their tenuous participation in the labor market, the employment rate is 24 points lower in the case of low skilled people than it is in the general public's case, 32% and 56% respectively.

Compared with the active people, the gaps in the employment situation are narrowing, although still in disadvantage of the low graduates: the occupation rate is 82% for low skilled people and 90% for the total population.

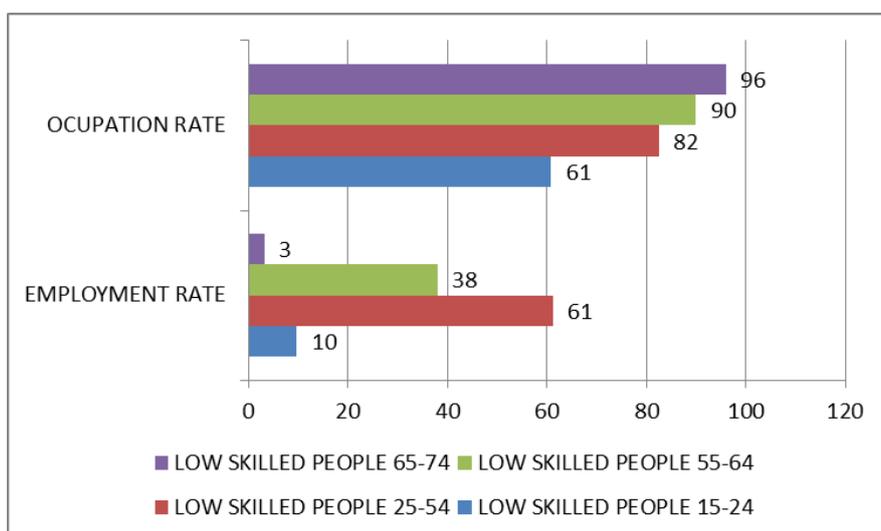
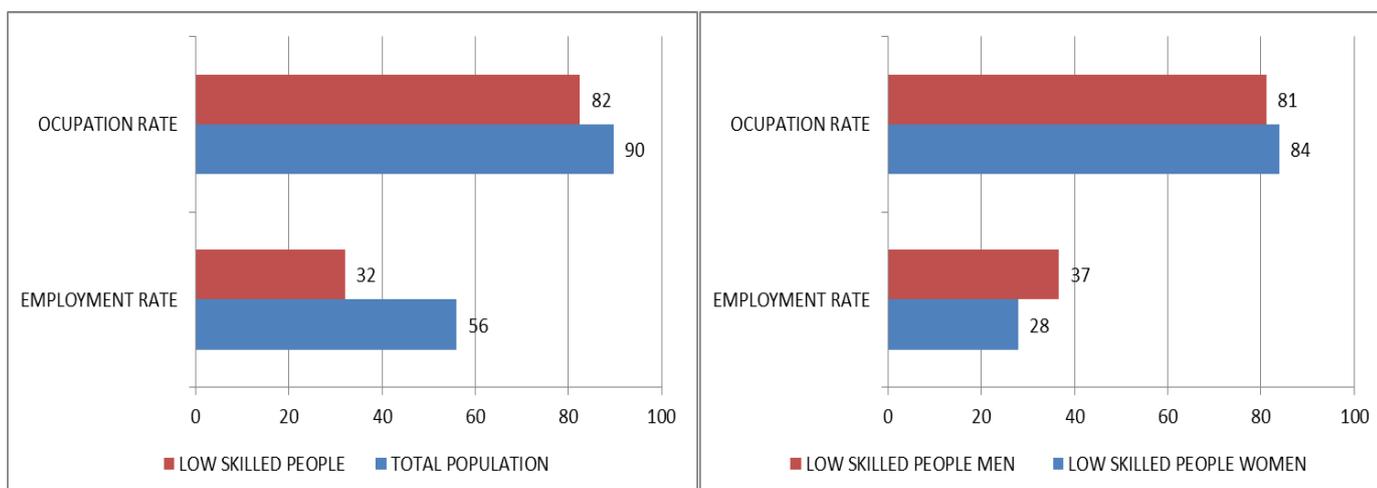
The employment rate of low-skilled women is significantly lower than that of their male counterparts (28% vs. 37%), but their occupation rate is higher (84% vs. 81%). Thus, when they are active, women who are not graduates are more likely to be employed than men.

The composition of occupations and the structure of labor demand can explain this situation in France. The low-skilled jobs are predominantly held by women. Indeed, the decline in the number of unskilled workers (especially in industry) has mainly affected men, while the increase of unskilled employees in tertiary sectors mainly concerned a female population (M. Meron, 2008⁸).

Regarding age groups within the population with low skills, it is the youngest who have a much lower employment rate and occupation rate. As for older workers (over 55), they have relatively low employment rates but higher occupation rates than their younger counterparts.

⁸ M. Meron, « Femmes et hommes dans l'emploi : permanences et évolutions », in « L'emploi, nouveaux enjeux. Edition 2008 » Insee Références, novembre 2008.

Employment and occupation rate. Comparison between the total population and the low skilled population by sex and age



Source: EUROSTAT, LFS. Données 2015, France entière

Labour conditions

Regarding labour conditions of low skilled people, we have analysed their daily workload (part-time or full-time) and the kind of held contract (indefinite or temporary).

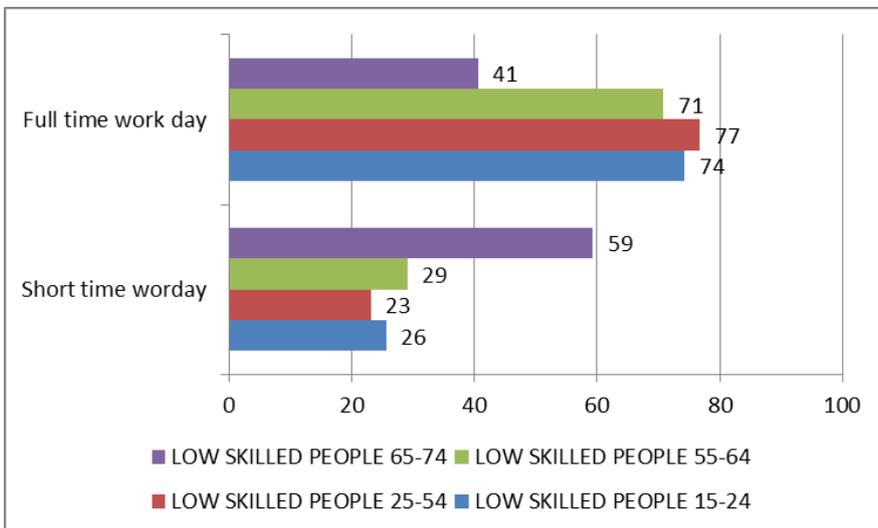
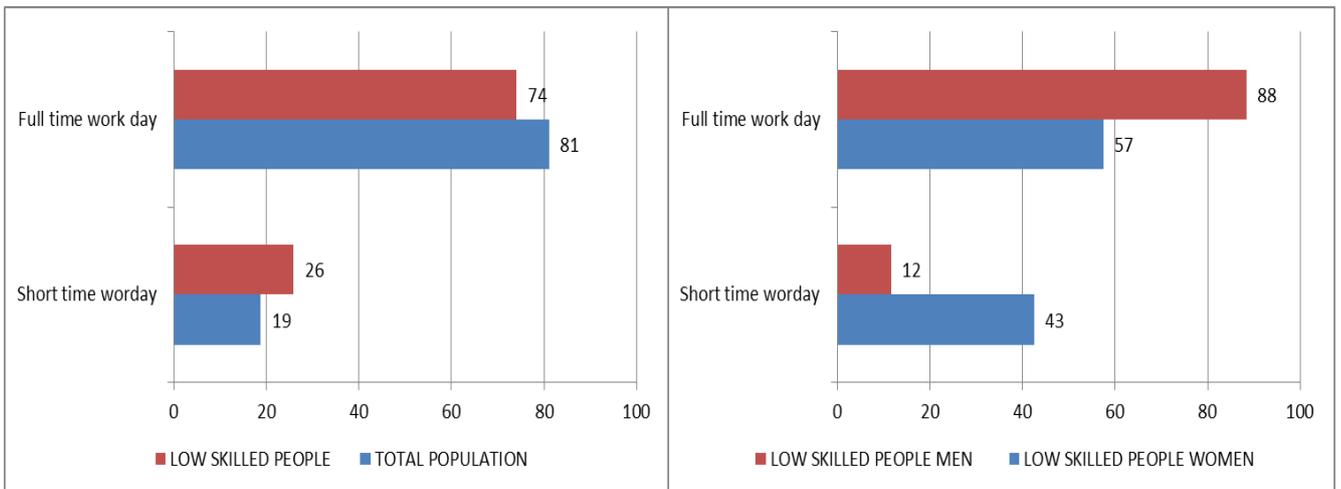
Overall, low skilled are more concerned with flexible jobs and by consequence this share of workers have less access to training and further learning. Indeed, in France, temporary or part-time workers have a lower probability of accessing employer-sponsored training than permanent or full time workers (Céreq, 2014⁹).

⁹ M. LAMBERT, I. MARION-VERNOUX (coord.) « Quand la Formation Continue - Repères sur les pratiques de formation des employeurs et des salariés », Céreq Ouvrages, avril 2014, 111 p.p..

Beyond this common feature, the situations are heterogeneous between categories of low skilled workers. Women and older workers are more concerned with part-time work, young people with temporary contracts.

There is a significant difference in the weight part-time jobs have compared to the population as a whole: 26% for the low skilled and 19% for the total population. The extent of part-time work differs significantly by age and gender. 43% of low skilled women are part-time compared to 12% of their male counterparts. 29% of low skilled workers aged 55-64 are part-time and the proportion is rising to 59% of low skilled people are aged 65 or older.

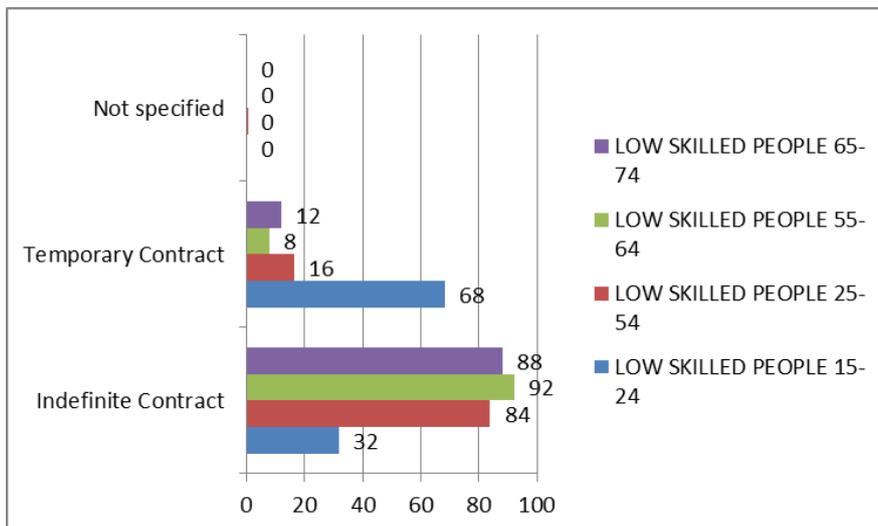
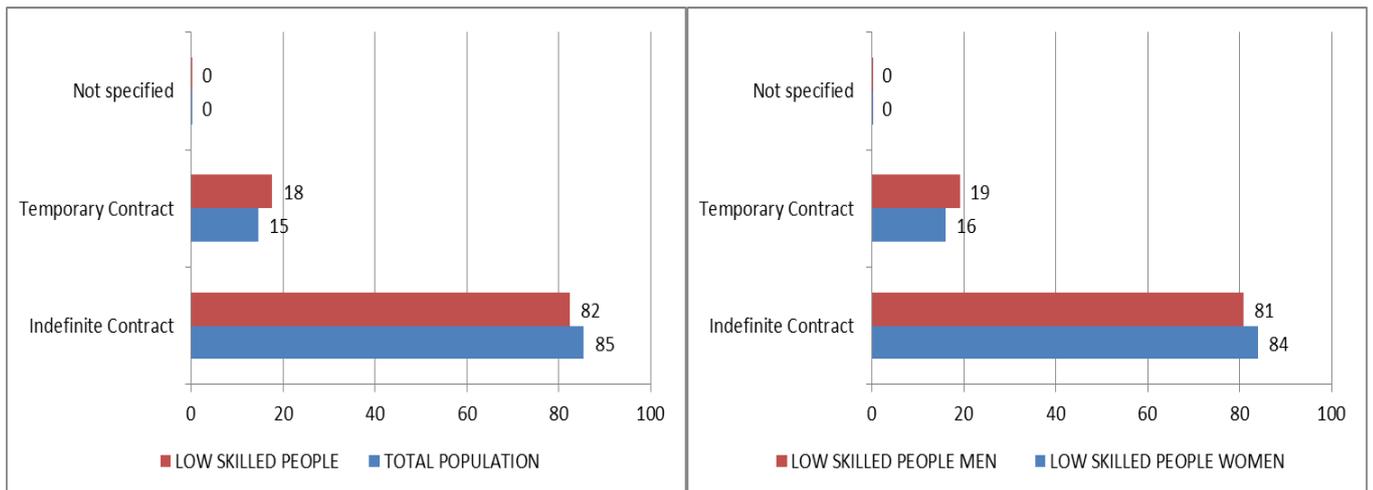
Type of workday of the employed low skilled population. Comparison according to sex and age



Source: Source : Insee, Enquête Emploi. Données 2015, France entière

Looking at the type of contracts, temporary contracts represent a 18 % in the case of low skilled people and 15 % in the entire population. Men are most likely to be employed in limited-term jobs (19% versus 16% among low-graduate women). Age is a particularly distinctive factor: 68% of 15-24 year olds in employment are on temporary contracts, whereas only 16% of middle-aged low skilled people.

Type of contract of the employed low skilled population, according with sex and age



Source: Source : Insee, Enquête Emploi. Données 2015, France entière

1.3. Participation by sector and occupation

Activity sectors

The employment of low skilled people can be described through four different sectoral clusters, corresponding to four specific segments of the French labor market in terms of workforce management (cf. A. d'Agostino, A. Delanoë, 2016¹⁰). This sectoral composition provides a scattered picture regarding the demand for lower level skills.

The first cluster covers the "secondary segment of services". These activities include personal and domestic services, health and social work, administrative and support services and public administration. This segment employs 45% of low graduate workers, more precisely:

- *Other service activities*, (mainly the sectors of personal services, the activities of health-social and social housing and social action) employs 19 % of low graduate workers,
- *Public Administration* employs 15 % of low graduate workers,
- *Administrative and support services sectors*, an essential component of the *financial and insurance activities*: employs 11 % of low graduate workers.

This segment is characterized by sustained job growth over the last ten years, flexible jobs and a significant turnover of its workforce. The population is ageing and feminized.

In these sectors, the employment of the low-skilled is concentrated in occupational categories likesales and services elementary occupations and clerical support workers

The second cluster covers the "occasional labor market of the low-skilled tertiary sector" and brings together the sectors of *Wholesale and retail trade; repair of motorvehicles and motorcycles* (18 %), in detail retail trade (12 %) and accommodation and food service activities (6 %). As in the previous segment, these sectors have a large and growing pool of jobs, part-time employment is very high. The workforce is young, the share of women slightly greater.

4 out of 10 low-educated people work in a profession of service and sales workers, but a relevant proportion of non-graduates are employed on qualified categories: 15% are managers, 11% are technicians and associate professionals.

The first two segments summarize the sectors in which low-skilled jobs has strongly developed over the last twenty years (M.A. Estrade, 2008¹¹) and mobilize a large majority of low graduates (63%).

The third sectoral cluster covers construction (9% of low-graduate employment) and transport and storage (8% of low graduate employment). These two segments employ a total of 2 out of 10 low educated workers.

¹⁰ A. d'Agostino, A. Delanoë, «Typologie sectorielle des modes de gestion de la main d'oeuvre », Céreq, Net.doc n°157, avril 2016.

¹¹ M.A. Estrade « Une prospective socio-économique du travail et de l'emploi peu qualifié », in « L'emploi, nouveaux enjeux. Edition 2008 » Insee Références, novembre 2008.

The labor force is predominantly male and middle-aged, but significantly younger in construction. Their employment is polarized on the category “crafts and related trades” workers (respectively 60% of the low graduate workforce in construction and 43% in transportation and storage). To a much lesser extent low graduated are also represented in the category “elementary occupations” (respectively 21 % and 11 %).

Finally, the fourth cluster brings together the manufacturing sectors (12% of employment):

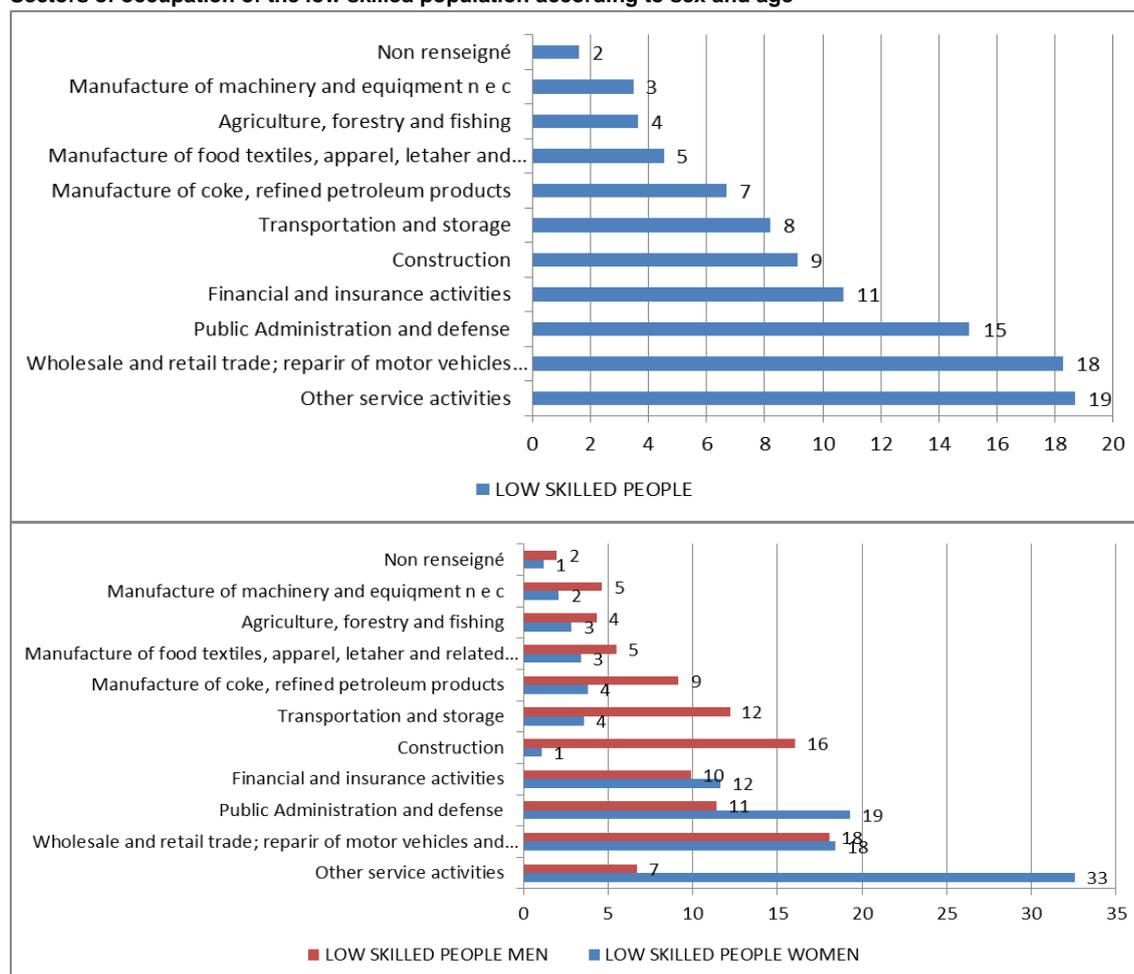
- Manufacture of coke, refined oil products¹² (7% of low-graduate jobs, mainly in manufacture of basic metals and manufacture of rubber and plastic products) ,
- Manufacture of food textiles, apparel, leather and related products (5 % of low-graduate jobs).

Employment in these sectors is declining, particularly in its low-skilled employment share. Very little feminized, the workforce are aging. Low educated workers have two categories of occupations in equivalent proportions: “craft and related trades workers” and “elementary occupations”.

The last two segments recorded a slowdown in low-skilled employment (mainly job-related jobs), which were heavily impacted by technical and economic developments, automated tasks and production processes, and relocations (M.A. Estrade, 2008).

The share of low educated is significant but has dropped significantly over the past 20 years. The ISCED 3 is now strongly represented.

¹² This aggregation refers to the nomenclature used by the SPANISH LABOUR FORCE SURVEY on template and is quite different of the Statistical Classification of Economic Activities in the European Community, Rev. 2 (2008).

Sectors of occupation of the low skilled population according to sex and age

LOW SKILLED PEOPLE

	15-24	25-54	55-64	65-74
Agriculture, forestry and fishing	4	3	5	9
Manufacture of food textiles, apparel, leather and related products	9	4	4	2
Manufacture of coke, refined petroleum products	2	7	7	2
Manufacture of machinery and equipment n e c	2	4	3	0
Construction	11	10	6	7
Wholesale and retail trade; repair of motor vehicles and motorcycles	31	18	15	18
Transportation and storage	4	9	8	7
Financial and insurance activities	7	11	11	13
Public Administration and defence	11	14	19	10
Other service activities	15	18	21	28
No data	3	2	1	2
Total	100	100	100	100

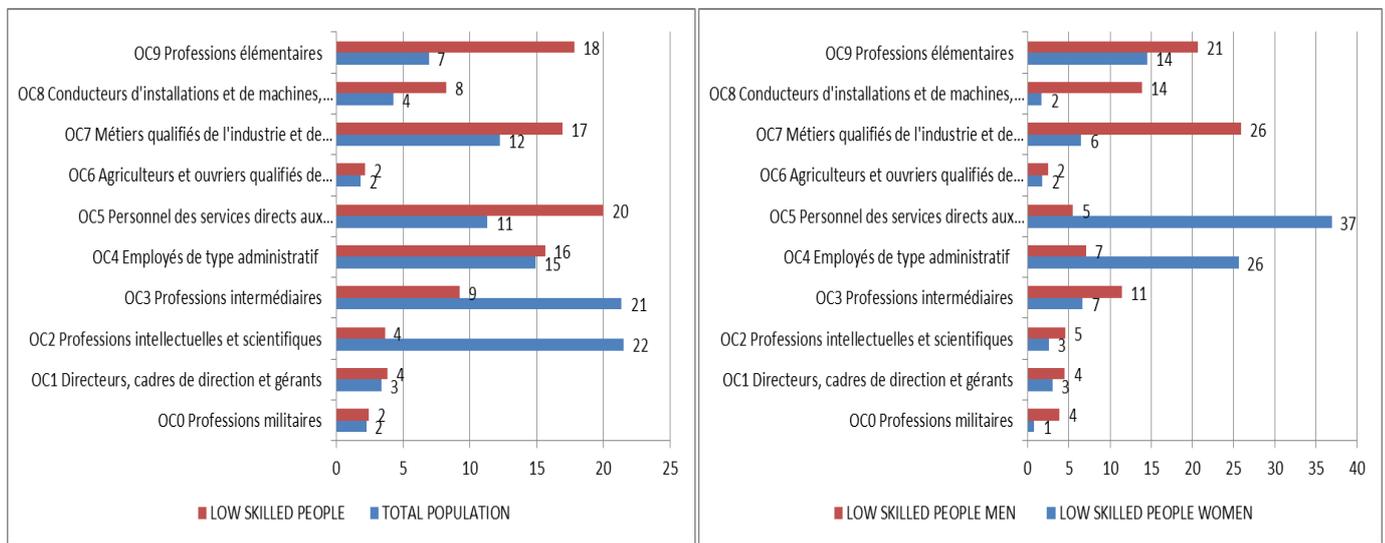
Source: Source : Insee, Enquête Emploi. Données 2015, France entière

Professional categories

When it comes to occupations, 79% of the low-graduates people work in low-skilled jobs (vs. 50 % for the total occupied population), in descending order:

- Services and Sales Workers (*sub-group 5 : personal services, personal care workers, protection services, workers in restoration services and vendors*): 20 % of low skilled people's jobs;
- Elementary occupations (*sub-group 9 : Cleaners and Helpers, Food Preparation Assistants, Labourers in Mining, Construction, Manufacturing and Transport*) : 18 % of low skilled people's jobs;
- Craft and Related Trades Workers (*sub-group 7 : Building and Related Trades Workers, Metal, Machinery and Related Trades Workers, Electrical and Electronics Trades Workers*): 17 % of low skilled people's jobs;
- Clerical Support Workers (*sub-group 4 : General and Keyboard Clerks, Customer Services Clerks, Numerical and Material Recording Clerks*) : 16 % of low skilled people's jobs;
- Plant and Machine Operators and Assemblers (*sub-group 8 : Stationary Plant and Machine Operator, Assemblers, Drivers and Mobile Plant Operators*): 8 % of low skilled people's jobs;

Professional categories of the low skilled population according to sex



Source: Source : Insee, Enquête Emploi. Données 2015, France entière

Professional categories of the low skilled population according to age

	LOW SKILLED PEOPLE			
	15-24	25-54	55-64	65-74
OC0 Military professions	2	3	1	2
OC1 Management (Directors, middle management)	0	3	4	14
OC2 Intellectual and research professions	2	3	4	6
OC3 Intermediate professions	6	9	10	5
OC4 Account and Administration clerks	10	15	20	8
OC5 Tertiary services (services to person, trade and sales)	28	19	21	31
OC6 Agriculture, fishery and forests qualified jobs	0	1	4	9
OC7 Industry and craft qualified jobs	13	18	15	12
OC8 Plant and machine operators, manufacturing line workers	4	9	7	8
OC9 Elementary professions	35	18	13	6
Total	100	100	100	100

Source: Source : Insee, Enquête Emploi. Données 2015, France entière

The professional segregation is very pronounced for low-graduate people. Indeed, in France, the education contributes on this to a significant extent whether it be in terms of training pathways (T. Couppié, D. Epiphane, 2006¹³) or in terms of degree level (Dares, 2013¹⁴).

Thus, the employment of women with low degree is more gathered than those of men: four out of ten professionals' groups occupy 84% of women with low degree and 72% of men. In addition, low graduate women and men work in different occupations. Clerical Support Workers and Services and Sales Workers are predominantly women¹⁵, while in Plant and Machine Operators and Assemblers, Craft and Related Trades Workers, and Elementary occupations are mostly men.

In the case of age groups, the occupations for the youngest and oldest people are less diversified than those of the middle-aged groups (25 to 54 and 55 to 64). For example, six out of ten job covered by young workers are divided between two occupational groups: The Elementary occupations and Sale and Services Workers. Similarly, 6 out of ten jobs covered by old workers are divided into three groups: Services and Sales Workers (31 %), Managers (14 %) and Craft and Related Trades Workers (12%).

¹³ T. Couppié, D. Epiphane, « La ségrégation des hommes et des femmes dans les métiers : entre héritage scolaire et construction sur le marché du travail », Formation emploi n° 93, janvier-mars 2006.

¹⁴ J. Argouarc'h, O. Calavrezo, « La répartition des hommes et des femmes par métiers - Une baisse de la ségrégation depuis 30 ans », Dares Analyses n° 079, décembre 2013.

¹⁵ A trade is said to be dominated by women when their share is 15 points higher than the average share of women in all trades. When it is 15 points lower, it is said to be male dominated.

Lessons from statistical work on job qualification trends in France.

The work carried out by Céreq¹⁶ and more recently by DARES¹⁷ reveal a raise in the “standards of qualification” of jobs. This is the result of two different and complementary trends over the last 20/30 years:

- A rise in job qualification as a result of strong growth for the high skilled jobs. However, this dynamic is not widespread in all sectors. The industry (especially in the field of woodworking and furniture, textiles and leather, mechanical engineering and metalworking) and construction have experienced a sharp fall in the number of unskilled workers in thirty years (850 000 and 180 000 jobs lost respectively) as a result of changes in the organization of production (automation, complexity of work methods and activities, quality approaches and relocation for industry). Conversely, in the tertiary sector, unskilled employees have made significant progress (especially in personal services, such as home helpers, cleaner, etc) tasks that can hardly be replaced by machines.
- Increase of the education level of the active population: if by the early 1980s, more than half of actives had not graduated, they are only one out five today. The rise of qualification level of employed people is faster than the qualification of jobs and there is an increase in “standards of qualification”. Thus, among unskilled employees and unskilled workers (in manufacturing sector) the share of non-graduates fell sharply while CAP/BEP diploma holders almost doubled in thirty years. In industry, the raise of the qualification standard can be due to the development of the apprenticeship (rather focused on unskilled jobs).

1.4. Unemployed low skilled people:

922 000 low skilled people are unemployed, which represent 30.2 % of the total unemployed population.

The unemployment rate among the low skilled is 7 points higher than that of the French population as a whole, 17.6% and 10.4% respectively.

There is a slight difference regarding working experience between low skilled people and population as a whole. 8 out of 10 unemployed low skilled people have experience, just 4 points less than the total population.

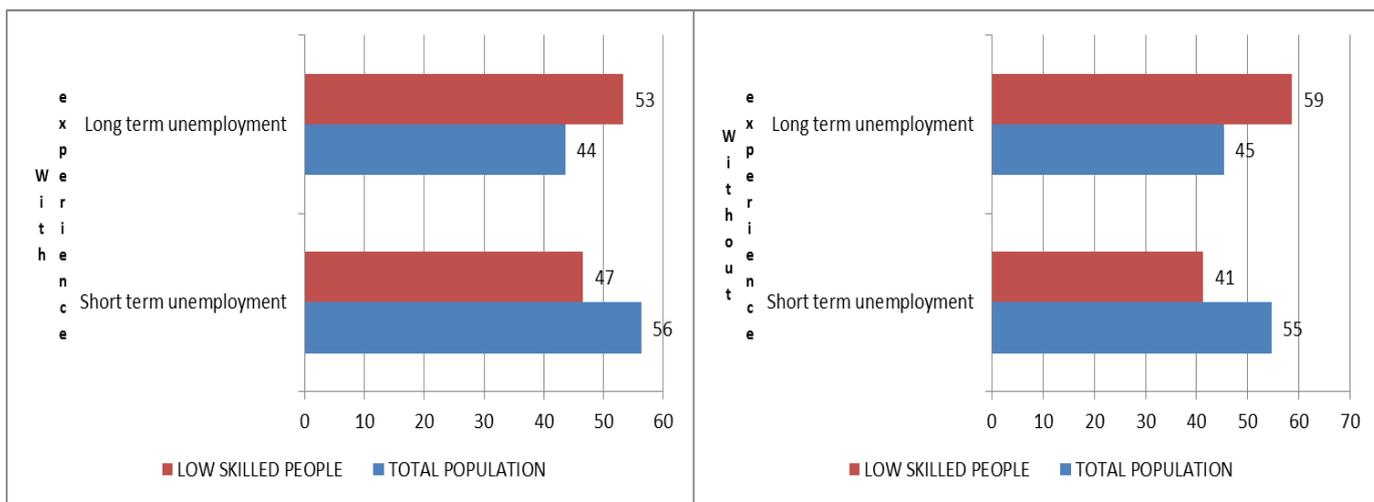
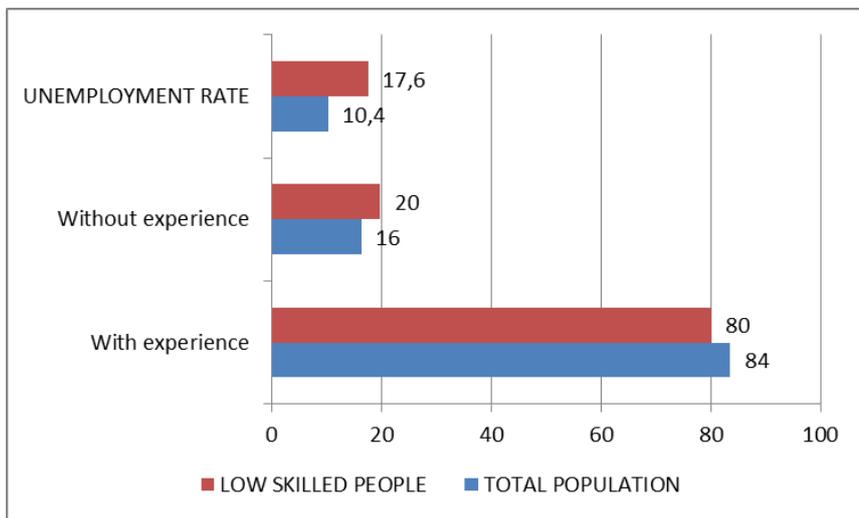
Moreover, low skilled people are more affected by long-term unemployment especially when they have had no previous work experience. These data confirm the findings that the diploma

¹⁶ Fournié D., Guitton C. (2008), « Des emplois plus qualifiés, des générations plus diplômées : vers une modification des normes de qualification », Bref n°252, Cereq, mai.

¹⁷ Babet C. (2017), « Comment ont évolué les métiers en France depuis 30 ans ? Forte progression des métiers du tertiaire et des métiers les plus qualifiés », Dares Analyses n° 003, janvier.

protects against the risk of long term unemployment even more than the risk of unemployment (J. Lê, S. Le Minez, M. Rey, 2014¹⁸).

Unemployment rate of the low skilled population comparison with the total population.

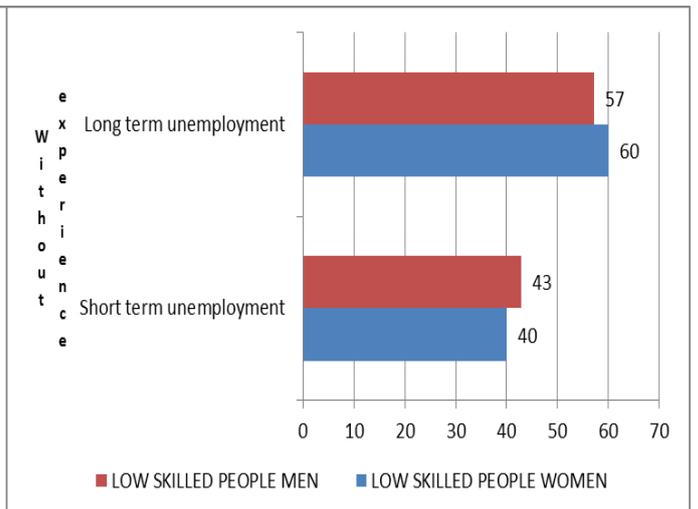
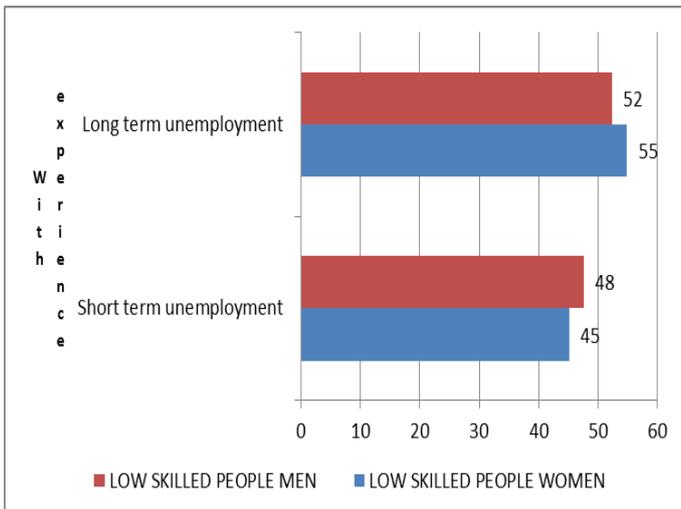
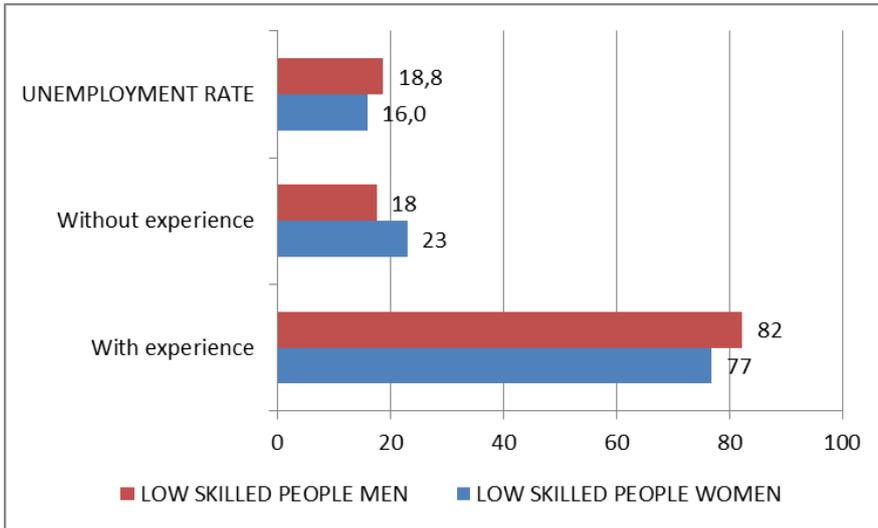


Source: Source : Insee, Enquête Emploi. Données 2015, France entière

Regarding sex, low skilled men are more affected by unemployment than their female counterparts, and are more likely to have previous work experience. They are also less affected by long-term unemployment, whether they have had previous experience or not.

¹⁸ J. Lê, S. Le Minez, M. Rey, «Chômage de longue durée : la crise a frappé plus durement ceux qui étaient déjà les plus exposés», in « France, portrait social - Édition 2014 », Insee Références, novembre 2014.

Unemployment rate of the low skilled population by gender.



Source: Source : Insee, Enquête Emploi. Données 2015, France entière

The unemployment rate decreases with age, but the difficulties to get out of it increase, especially for the non-graduates who are over 55 years old. Thus, the unemployment rate for 15-24 year-olds without a diploma is 39%, which is 4 times higher than the non-graduates aged 55-64. Among the low graduate unemployed with previous experience, 31% of those aged 15-24 were faced with long-term unemployment, compared with 66% of their counterparts aged 55-64.

Unemployment rate of the low skilled population by age.

		LOW SKILLED PEOPLE			
		15-24	25-54	55-64	65-74
With experience	Short term unemployment	69	47	34	37
	Long term unemployment	31	53	66	63
	TOTAL unemployment with experience	42	88	96	100
Without experience	Short term unemployment	49	31	0	0
	Long term unemployment	51	69	100	0
	TOTAL unemployment without experience	58	12	3	0
UNEMPLOYMENT RATE		39	18	10	4

Source: Source : Insee, Enquête Emploi. Données 2015, France entière

1.5. Statistical analysis conclusions

- Low skilled people in France represent 33% of the total population (17,180,160 people) With a lower activity rate than that of total population (38.9% and 62.5%), they also show a lower employment rate (32.1% and 56.0%), lower occupation rate (82.4% and 89.6%) and a higher unemployment rate (17.6% and 10.4%).
- Low skilled accounts for 16% of the employed population (4,334,700 people). Low qualified jobs predominantly and increasingly held by women in tertiary sector: sales and services elementary occupations. The “decline of non-qualified workers” mainly affected men in industry sector and manufacturing.
- Low skilled are more concerned with flexible jobs. Part-time jobs are of a greater significance among the low skilled (women and older workers) than among total population (26 % and 19 %). Indeed, they are confronted with less access to training and further training (lower probability to accessing employer-sponsored training).
- Low skilled workers are concentrated two groups of sectors:

Sectors in which low-skilled jobs has strongly developed over the last twenty years and mobilize a vast majority of low graduates:

- Personal and domestic services, health and social work, administrative support services and public administration employs 45% of low graduated workers : sustained job growth over the last 10 years , flexible jobs, significant turnover
- Retail trade, accommodation and food services activities (18 % of the low graduate jobs) : large and growing pool of jobs, part-time employment is very high.

Sectors that recorded a decrease in low skilled employment which were heavily impacted by technical developments (automated tasks and innovative production processes) and economic change (relocations of factories).ISCED 3 is now strongly represented :

- Construction , Transports, Logistics and Storage (17 % of low graduate employments): labour force predominantly male and middle-aged (younger in construction), strong need of requalification, and skills upgrade
 - Manufacturing Sectors (12 % of low graduate employments): low skills employment is declining, very few feminized and aged population.
- 79 % of the low graduates people work in low-skilled jobs: Services and Sales Workers , Elementary occupations, Craft and Related Trades Workers, Plant and Machine Operators and Assemblers, Clerical Support Workers
 - 922,000 low skilled people are unemployed. The unemployment rate among the low skilled is 7 points higher than that of the French population as a whole, 17.6% and 10.4%

respectively. Moreover, low skilled people are more affected by long-term unemployment, especially when they have had no previous work experience

- Regarding differences between the two sexes among low skilled people:
 - The inactivity is higher among women, having a significantly lower employment rate.
 - Women have a higher occupation rate: thus when they are active, women are more likely to be employed than men.
 - Part-time jobs are more common among women.
 - Occupational segregation is very marked for non-graduates: 70% of jobs among women concentrate in *Personal and domestic services, Public Administration and Detail retail trade*. Men's jobs are closer to construction, transportation and storage and manufacturing. The occupation of low graduate woman is both fewer and very different from those of men. Thus, clerical support workers and services and sales workers are predominantly women, while plant and machine operators and assemblers, craft and related trades workers, and elementary occupations are mostly men.
 - Women are less affected by unemployment than men, but more by long-term unemployment. There is a higher proportion of unemployed and inexperienced among low skilled women.

- Concerning differences among age groups:
 - Although very concentrated on the intermediate age group (64% of low-skilled workers are between 25 and 54 years of age), the low graduate active people is older than the average workforce and less feminized. The same applies to the working population.
 - Part-time jobs are more common among the oldest low skilled people but temporary jobs more common among the youngest low skilled people.
 - 31% of the youngest low skilled people are working in commerce, while for the rest age groups these sectors represent nearly one in five jobs. The oldest are over represented in services, transportation and storage and manufacture of coke.
 - The unemployment rate decreases with age but the difficulties to get out of it increase, especially for the low graduates of more than 55 years.

SECTION 2. OPPORTUNITIES OF THE REPLACEMENT DEMAND FOR THE FRENCH COUNTRY – Key Facts

Céreq is not used to produce by its own estimates regarding sectoral and occupational employment prospects. Our approach in this chapter is to relate to the work produced by French institutions, in association with a plurality of economic stakeholders and decision makers in the field of employment and training. Insofar as the study seeks to mobilize some of these actors (cf sections 4), it appears to us more relevant to mobilize them on lessons and diagnoses widely shared in France regarding expected changes in employment.

Thus, the following information is entirely issued by the prospective works on occupations and qualifications carried out by France Stratégie and Dares. For further details on the results and the methodological aspects, we make reference to their report “Les métiers en 2022”¹⁹:

The main results of this work are also included in the Cedefop publication « EU Skills panorama – Analytical Highlight – Prospects for France »²⁰.

Projections for total employment by occupations – Global trends in replacement demand

This work provides a global overview of the employment prospects and the job positions to be filled by 2022 by professional field. Employment projections are based on sector forecasts (30 sectors) according to occupational clusters (87 FAP). Foreseen job positions are the result of employment growth and departures (especially at the end of career, also called “replacement demand”). The macroeconomic projections are declined in three scenarios (“crisis”, “central” and “target”) based on different possible crisis outcomes.

The main results of this prospective work are:

- Growth in the number of vacancies will be more sustained compared to the past decade (2002-2012) regardless of the scenario considered. Thus, about 800 000 new jobs posts per year are expected between 2012 and 2022, mainly generated by retirement replacements at the end of career (78% of positions to be filled in the central scenario).
- The constant expansion of the tertiary sector is one of the major trends of the prospective exercise. It is the result of sector trends already at work: employment growth in trade and services (particularly pronounced for care and personal services occupations) and reduction of employment in public and agriculture sector, a relative stabilization of employment in the industrial sector. The employments of tertiary sector

¹⁹http://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs_rapport_metiers_en_2022_27042015_final.pdf

²⁰ http://skillspanorama.cedefop.europa.eu/en/analytical_highlights/prospects-france

(76% of jobs in 2012) would account for nearly 94% of the total employment creation (1,6 million jobs created) in the central scenario.

- Polarization of jobs is expected to continue with a marked increase in both skilled occupations (managerial categories) and categories of unskilled employees (personal services, hospitality and catering, child care and security). It should be noted here that the job destruction of low-skilled workers is expected to temper in comparison with the previous decade.

Net job creation according to the dominant level of qualification of the professional clusters (Fap) – in thousands

Fap's dominant qualification level	Numbers in 1992	Numbers in 2002	Numbers in 2012	2022		
				Target Scenario	Central Scenario	Crisis Scenario
self-employed worker	2 478	2 039	2 003	48	21	-21
Low skilled worker	1 809	1 671	1 355	-16	-19	-66
Skilled worker	4 149	4 384	4 100	150	120	36
Low skilled clerk	2 468	3 081	3 355	336	310	236
Skilled clerk	4 563	4 679	4 478	191	155	58
Intermediate professions	3 892	4 562	5 133	608	512	376
Managers	3 643	4 414	5 385	805	675	536
Total	23 002	24 830	25 808	2 123	1 774	1 155

Concepts: employment ILO definition, classification of the professional clusters (Fap 2009) grouped according to the dominant of the qualification level of the FAP.

Field: households, Metropolitan France.

Source : Insee, enquêtes Emploi 1991 à 2012 ; Dares, séries rétropolées 1991 à 2002 ; projections France Stratégie – Dares.

Net job creation by occupational field- In thousands

Professional field	Numbers in 2012	1992-2002	2002-2012	2012-2022		
				Target	Central	Crisis
Agriculture	948	-383	-112	-64	-76	-91
Building	1 886	-23	115	150	128	83
Manufacturing	3 205	108	-417	74	43	-51
Transports and maintenance	1 893	216	-43	112	83	40
Trade, Hospitality and Catering	3 984	298	240	473	426	335
Services to Business *	4 206	559	348	549	451	321
Services to individuals and communities *	3 049	600	329	344	313	231
Education, health, Culture	4 320	654	651	537	476	405
Public service, military, police**	2 163	-255	16	-66	-83	-123
Other (politics professionals, clergy, craftwork...)	154	54	-148	13	12	8
Total	25 808	1 828	978	2 123	1 774	1 155

* Business services occupations include the administrative and technical fields mainly practised in companies: administrative professions, banking and insurance trades, computer specialists, research and study staff. Individual and community service occupations include personal

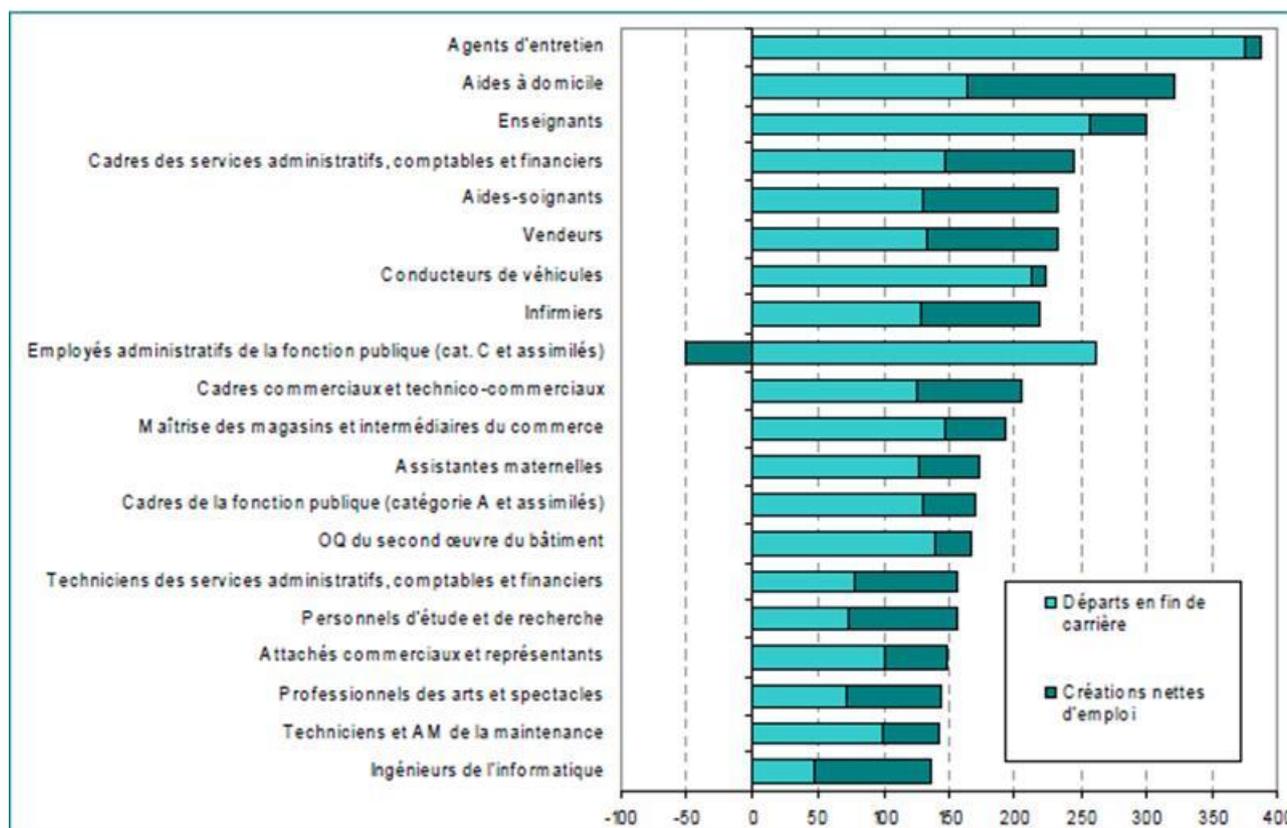
services professions (home helpers, domestic workers, hairdressers, nurse assistants) and caretakers, security guards or private security guards (T-level).

** Including military contingents over the period 1992-2002; excluding military and police personnel, the number of public administration would be reduced by 21,000 over the period 2012-2022, compared with an increase of 109,00 and 29,000 over the period 1992-2002 and 2002-2012.

Field : households ; Metropolitan France.

Source : Insee, enquêtes Emploi 1991 à 2012 ; projections France Stratégie – Dares.

Occupation with the most vacancies between 2012 and 2022 – In thousands



Interpretation. First line: over the period 2012-2022, there are 387,000 maintenance staff positions to be filled, including 375 000 to replace departures at the end of their careers and 12 000 to respond at net job creations. Ninth line: occupations of public sector employees with low skills (category C), should lose 51 000 jobs between 2012 and 2022 and should have 262 000 departures of the end of their careers. A total of 211 000 positions would be vacant (262 000 – 51 000) which is a smaller number than the overall number of retirements.

Field: households; Metropolitan France.

Source : projections France Stratégie – Dares.

SECTION 3. SELECTED ECONOMIC SECTOR AND TARGET GROUP IN THE FRENCH COUNTRY

The previous sections of this report show that, despite a rise in job qualification in France, the mobilization of "low skilled" workers remains substantial (particularly in the "Ile-de-France region"), while being much diversified according to occupational domains.

The current and expected changes in labor and employment (under the effect of energy, digital, demographic transitions or what is called the "tertiary revolution") suggest qualitative and quantitative reallocations of sectoral employment and a risk of weakening certain groups of the population on the labor market, in particular the low-qualified. We also pay particular attention to the fact that access difficulties to employment and the qualification levels are a matter of generation in France.

This risk is not homogeneous according to the occupations or activity sectors, the required skills depends on the degree of exposure to technological, organizational changes. Thus, some activities that are highly labor-intensive maintain or develop their needs in low skilled labour (as in the personal and domestic service sectors). Other sectors are affected by significant job reduction (especially energy-intensive industries that are highly exposed to automation, such as metallurgy, wood-paper, textile-leather-clothing, cement, and the agro-foodstuffs industries), or qualitatively affected, requiring a rise in qualification of certain trades (delivery and commercial employees, transport and logistics, construction, but also chemistry).

Our ambition here will be to focus on activities, sectors and trades, called "sensitive", in the sense that low-skilled employment is important and is under serious threat, particularly as a result of the digital transition.

From this point of view, two sectors appear to be particularly strategic. Logistics is a sector that employs 1.8 million people and is widely accessible to low-skilled workers (40% of jobs are unskilled). The French Government attaches particular importance to this, as shown by its plan "FRANCE LOGISTICS 2025 - a National Strategy for Logistics", which is deployed since 2016. Developed through a process of consultation with all stakeholders in the sector, to strengthen today's logistics and prepare for the future, adapting it to digital changes and to the challenges of energy and climate transition, this plan includes five strategic axes. One of them focuses on "human capital development" by improving the readability of jobs and training and simplifying qualification paths (changes in qualifications, construction of common competences for different sectors, support of VAE and VAP systems, improvement of working conditions, etc.). The question of how actors and decision-makers (national or even regional) have seized on these issues and how they will translate it into concrete action seems quite crucial for us.

On the other hand, we chose the metallurgy (metal industry) sector. With 1.5 million jobs in France and job losses over the past 20 years, the French metallurgy is looking for a new model of development by focusing on innovation and new services. This sector is historically emblematic for French industry and is leaving a process of restructuring because of the

automation of tasks. It is also a strategic sector with a generational challenge for the sector stakeholders including public training providers and territorial actors.

- 1- Because the new technology could be both a source of job losses and also an opportunity for new products and jobs
- 2- Because the link between new jobs, skills and qualifications is structured by the actors
- 3- Because there is a generational challenge
- 4- Because the establishment of this sector over a region structures the local economy is to the point of becoming a territorial issue

3.1 The projection of employment needs in logistics

Focus on transport, logistics and tourism

The data produced by France Strategy and the DARES do not make it possible to define the perimeter of logistics field. The wider field of transport, logistics and tourism provides though some insights into job prospects (extract from the report):

"With 83,000 extra jobs over the period 2012-2022, an average annual increase of 0.4%, the number of jobs in transport, logistics and tourism is expected to grow at a slower pace than of all businesses. However, there are differences between occupational families and skill levels.

Thus, the growth in technicians and managers number is expected to continue to be very dynamic (+1.8% and + 1.2% net creations per year), driven by the development of trade, procedures for regulating the flow of goods and passengers. **Job prospects would be stable for low-skilled workers who would be affected by automation and computerization of production processes.** In a scenario more favorable to technological advances and innovation, the upward trends for the most skilled jobs are even noticeable.

Over the period 2012-2022, retirement departures could concern 457 000 people employed in the transport, logistics and tourism trades. In total, according to the central scenario, 540,000 jobs would be filled in this field by 2022 (excluding occupational mobility), which it represents 2.8% of the total workforce a percentage slightly lower than the one expected for the whole French labour market (France Stratégie, Dares, 2015²¹).

²¹ France Stratégie, Dares « Les métiers en 2022 – Prospective par domaine professionnel », Synthèse.stat', numéro 11, avril 2015.

Evolution of employments and vacancies for the sector « transport, logistics and tourism »

	jobs in 2022 (thousands)	Net jobs creation (thousands)		Net jobs creation 2012-2022 (thousands)			job posts forecast 2012-2022 (thousands)		
		1992-2002	2002-2012	Target	Central	Crisis	Target	Central	Crisis
The sector in total	1 976	216	-43	112	83	40	569	540	497
ONQ maintenance	340	16	-86	5	1	-8	64	61	52
OQ maintenance	461	85	-14	30	24	12	131	126	114
Vehicles drivers	757	28	-9	16	12	-3	227	223	209
Transport operators	119	47	18	25	20	18	50	45	43
Administrative and commercial agents of transport and tourism	198	27	22	20	15	11	57	51	48
Transport, Logistics and Aviation Flying Officers	100	13	25	16	12	10	39	34	33

ONQ : Non (or low) skilled workers; OQ : skilled workers.

Source : Insee, enquêtes Emploi 1991 à 2012 ; Dares séries rétropolées 1991 à 2002 ; projections France Stratégie – Dares.

The report of the Prospective Observatory for Trades and Skills in Transport and Logistics of 2016 completes this overview. The share of permanent contracts is more than 85% for the period going from 2010 to 2015 for the Logistics sector. The average age is fairly young for logistics providers, less than 40 years vs 43 years and 8 months for the entire industry. The under-30s are more numerous than the over-50s: substitution rate is 1.1 against 2.5 for the entire branch. The ratio of the number of employees over 50 years of age on the total number of employees is 20%. In comparison, it is 31% for the entire industry. Retirements are therefore not the main driver of staff turnover: 10% come from job creation, 3% from retirements and 86% are due to replacements of departures for resignation, end of temporary contracts, conventional breach, dismissal other than economic, etc. The share of open-ended contracts is 52%, compared with 67% for the branch. Temporary work plays a very important role in recruitment, with 45% of the logistics operators recruited in the sector in 2015 following an interim assignment, compared with less than 15% in the other branch sub-sectors (85% of the companies in the sector have used temporary worker positions as warehouse workers in 2015).

3.2 Projections on employment requirements in metallurgy

Employment projection method

Branch actors have an estimation method of recruitment needs that integrates three dimensions. First, the demographic structure and retirements provide replacement number. Secondly, changes in activity and job profiles descriptions define the quality of recruitment needs. Lastly, internal and external mobility takes into account the adaptation of employees by

individual mechanisms. Thus, once the needs are identified, the branches anticipate resources in order to organize on the one hand the renewal of employees and skills through internal mobility and on the other external recruitments. The projections for external recruitments are done both for young graduates accessing for the first time the labour market and for adult employees.

Forecasts carried out by the branch organization is particularly interesting because it integrates sector knowledge with the impacts of digitalisation in terms of jobs needs, qualifications and companies (re)organization. Regarding numbers, forecast takes into account jobs decrease due to automation of processes but also technological change new opportunities in terms of creation of new products. The technology effects on business organizations is included in the approach, in the extent that it is internal mobility at sector level rather than at company level which is considered for employee renewal analysis. Finally, the link between skills and qualifications is studied differently according to age. The newcomer qualification is assimilated to the *baccalaureate* level, which is not necessarily the case for the other age groups. This approach includes well the diversity of training methods, the exchanges among actors in different forms of initial training or lifelong learning.

Finally, in addition to structural changes, the forecast includes various macroeconomic scenarios and competitiveness effects. The study presented here was carried out in September 2014. It offers two horizons 2020 and 2025.

Forecast regarding metallurgy sector

The metallurgical sector embraces the following sub-sectors²²:

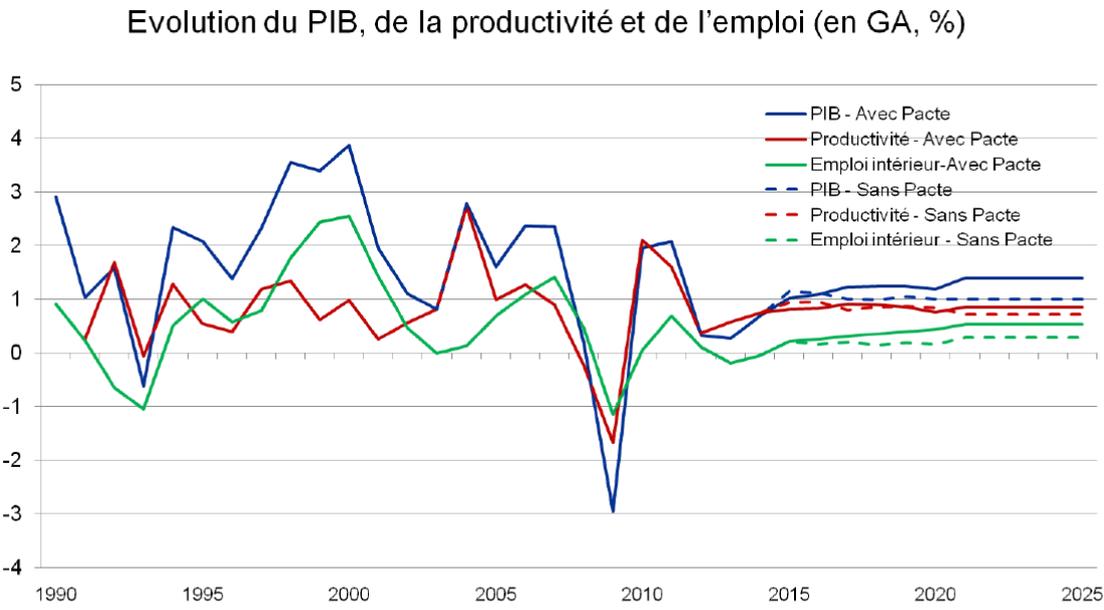
- Computer, electronic and optical products manufacturing
- machinery and equipment manufacturing
- electrical equipment manufacturing
- metallurgy and metal products manufacturing
- automotive Industry
- other transport equipment manufacturing
- other manufacturing; repairs and installation of machinery and equipment

The perimeter corresponds to about half of the industry value added, i.e. 103 billion euros in 2013. It does not contain the rest of the industry such as agro-business, chemical industry, rubber and plastics.

Past and future prospects for growth reflect the anticipations of low growth.

²² 24 to 30, 33 and part of 32 for the Insee classification.

Figure 1 : Outlook and variation around three economic policy scenarios



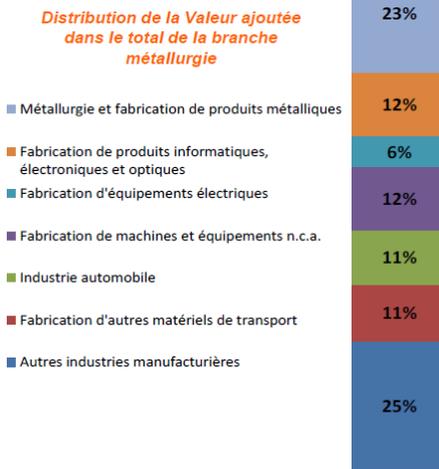
BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

Source : Estimations BIPE, d'après des données INSEE

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Figure 2: Foresight perimeter in terms of sectors

Poids des différents secteurs de la Métallurgie en 2012 – (volume 2010)



Caractéristiques de la branche métallurgie dans l'industrie et dans l'économie française - (volume 2010, vision branche)

	Production	Valeur Ajoutée	FCBF	Masse Salariale (valeur 2012)	Emplois Salariés
Branche métallurgie	336 Mds €	103 Mds €	16 Mds €	74 Mds €	1,3 millions
% Industrie manufacturière	47%	50%	55%	55%	50%
% Economie Française	9%	6%	5%	7%	5%

Source : INSEE

Balance commerciale de la branche métallurgie : -11,6 Mds € en 2013 (volume)

BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

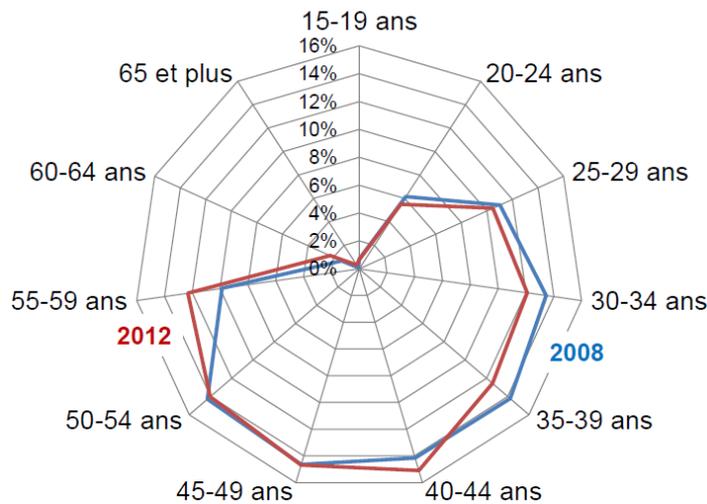
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Retirement forecast

The demographic forecast over time shows an aging of the wage-earning population resulting from a shift of the youngest to the oldest age groups. This shift favors internal mobility, with the younger ones having more opportunities of progression for retirements substitution depending by companies internal policies. Over 50 workers account for about 30% of the total number. Under 30 account for 17% of the total number. Forecasts show a number 29,200 retirements per year on average until 2020 and 33,700 retirements per year until 2025. The age distribution by sub-sector shows a homogeneous demographic structure. Computer, electronics and optical products manufacturing sector is characterized by a younger population.

Figure 3 : The decline of sectors workers is accompanied by a population aging

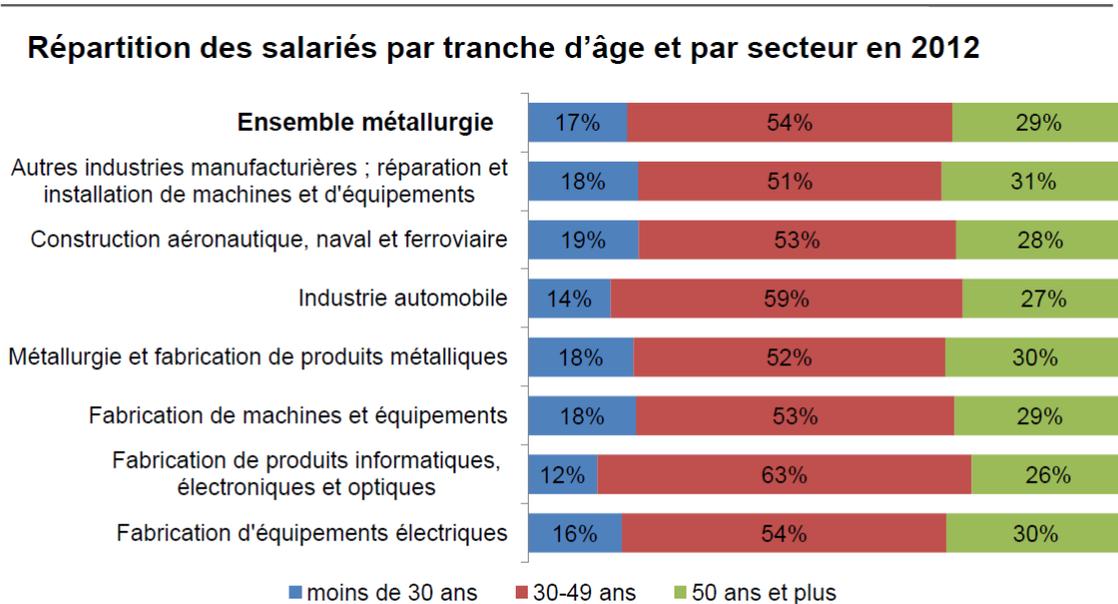
Répartition des salariés des secteurs de la métallurgie par tranche d'âge quinquennale en 2008 et 2012



BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

Source : BIPE, exploitation enquêtes Emploi INSEE 54

Figure 4: Over 50s account for about 30% of metallurgy workers



Source : BIPE, exploitation enquêtes Emploi INSEE

BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

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Figure 5 : Estimated number of retirements

Nombre de départs à la retraite à l'horizon 2025

En moyenne par an

	2016-2020	2021-2025
Fabrication de produits informatiques, électroniques et optiques	2 700	3 100
Fabrication d'équipements électriques	2 400	2 600
Fabrication de machines et équipements	3 800	4 400
Industrie automobile	4 700	4 800
Autres matériels de transport	3 400	4 400
Métallurgie et fabrication de produits métalliques	8 400	9 700
Autres secteurs	3 800	4 700
TOTAL	29 200	33 700

Source : Projections BIPE

BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

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Mobility forecasts

External mobility is mainly caused by businesses or plants closures. Internal mobility refers to change in socio-professional category. Workers (blue collars) represent 50% of total number of employees in the branch. There are differences between sectors.

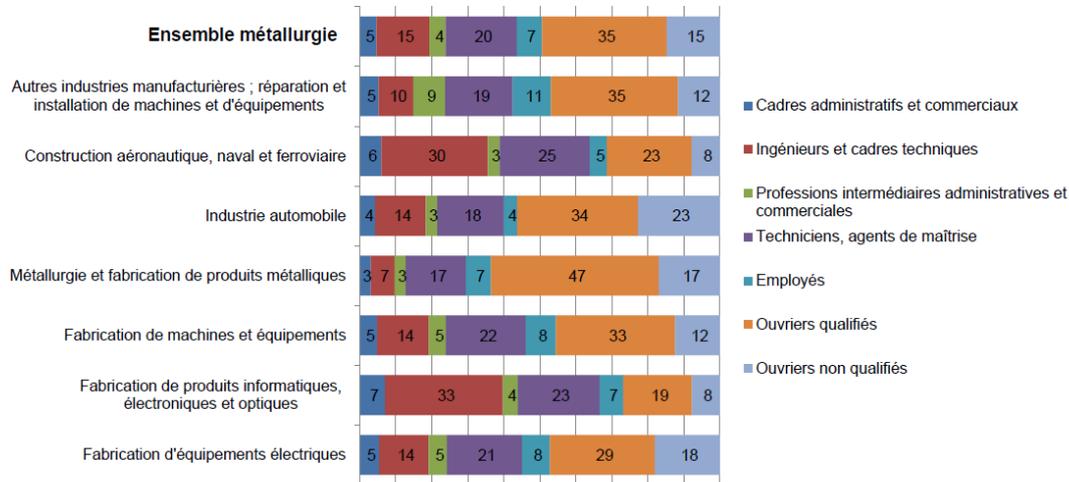
Skilled workers are 2,3 times more than the unskilled, respectively 35% and 15% of the workforce. This gap will tends to increase in large proportions, rising to a ratio of 3,3 in 2020 and 3,1 in 2025; In 2025 unskilled workers will represent 8,7% in of the workforce while 36% will be composed by the skilled ones.

Engineers and technicians are more prevalent in the computer, electronic and optical products manufacturing and transport equipment. These structures affect internal and external mobility with interesting promotion opportunities for unskilled workers. When we analyse the external mobility rate for the whole metallurgy sector, there are variations by sub-sector. In addition, sub-sectors with higher mobility rates have more blue collars workers such as metallurgy, 10,5% average annual external mobility; and the automotive industry, 9,5% annual rate; and those with a lower rate correspond to sectors with more qualified employees.

External mobility corresponds to the contexts of company closures and to employees who go towards activities that are similar but recorded in different activity sectors. The occupational category of unskilled workers is the one that benefits most from internal mobility, it moves towards the category of skilled workers, with 5,4% of annual beneficiaries compared with a general average mobility of 1,8%. This phenomenon is the result of an intra-company recruitment policy, which often favours internal promotions rather than external recruitment. Therefore, we may be surprised by the companies' behaviour which corresponds to a perception of a tense labour market, while the unemployment rate is very high. This apparent contradiction could be one of the basis for further analysis. Under the assumption of a need for relatively scarce skills on the market, stronger training policies could be a solution to increase access to these jobs.

Figure 6 : "Blue collars" represent 50% of the workforce

Répartition des salariés par catégorie professionnelle selon les secteurs de la métallurgie en 2011 (en %)



Source : BIPE, exploitation DADS INSEE

BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

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Figure 7 : The increase in employment corresponds to an increase in the skill requirements

Evolutions de l'emploi par catégorie professionnelle Scénario sans Pacte ni CICE

Vision secteur dans ce chiffrage

	Milliers			Structure en %		
	2013	2020	2025	2013	2020	2025
Cadres administratifs et commerciaux	66,7	63,7	61,4	4,7%	5,2%	5,4%
Ingénieurs et cadres techniques	208,8	216,6	214,2	14,7%	17,5%	18,8%
Professions intermédiaires administratives et commerciales	63,9	59,1	56,4	4,5%	4,8%	4,9%
Techniciens, agents de maîtrise	281,8	261,3	247,9	19,8%	21,1%	21,7%
Employés	99,5	68,1	55,6	7,0%	5,5%	4,9%
Ouvriers qualifiés	493,3	437,9	407,6	34,7%	35,4%	35,7%
Ouvriers non qualifiés	209,3	130,7	99,3	14,7%	10,6%	8,7%
Ensemble	1 423,3	1 237,4	1 142,3	100,0%	100,0%	100,0%

Source : 2013, INSEE / Comptes de la Nation, Acoess et DADS - 2015 et 2020, Projections BIPE

Note : la déclinaison de l'emploi par niveau de qualification est obtenu à partir du modèle CALIFE (ce modèle permet de prévoir les déformations des structures d'emploi par secteur, et donc de déterminer l'évolution future de l'emploi par secteur et par niveau de qualification).

x.201,1 mm 4 - Etude Prospective Emploi - Observatoire de la Métallurgie

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Figure 8 : The average rate of external mobility depends on the sectors

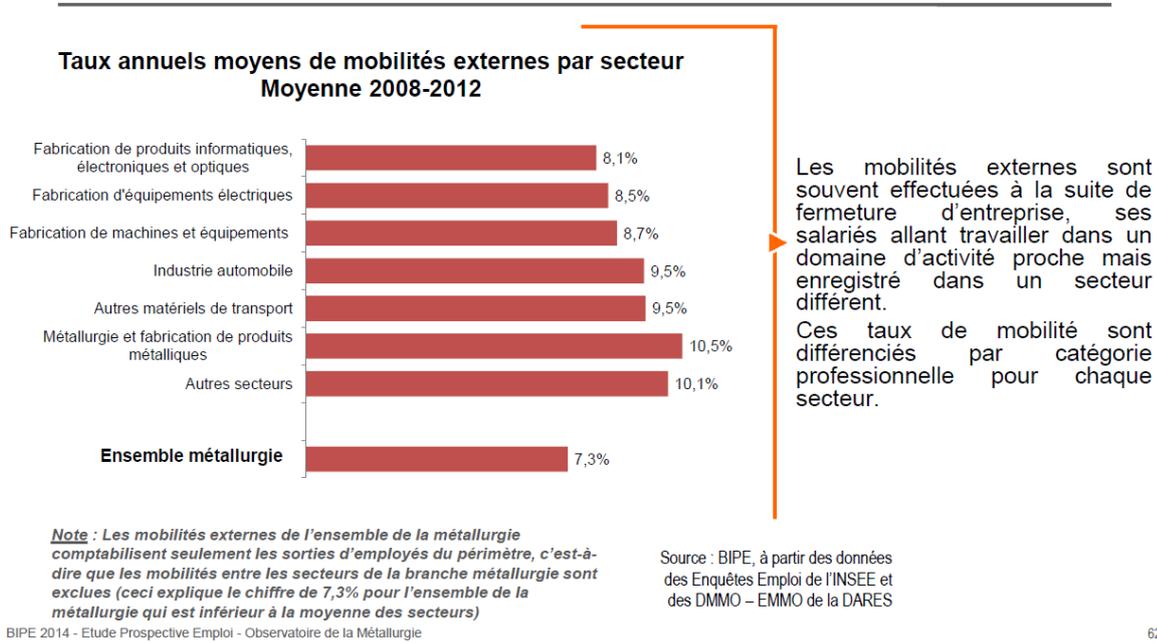
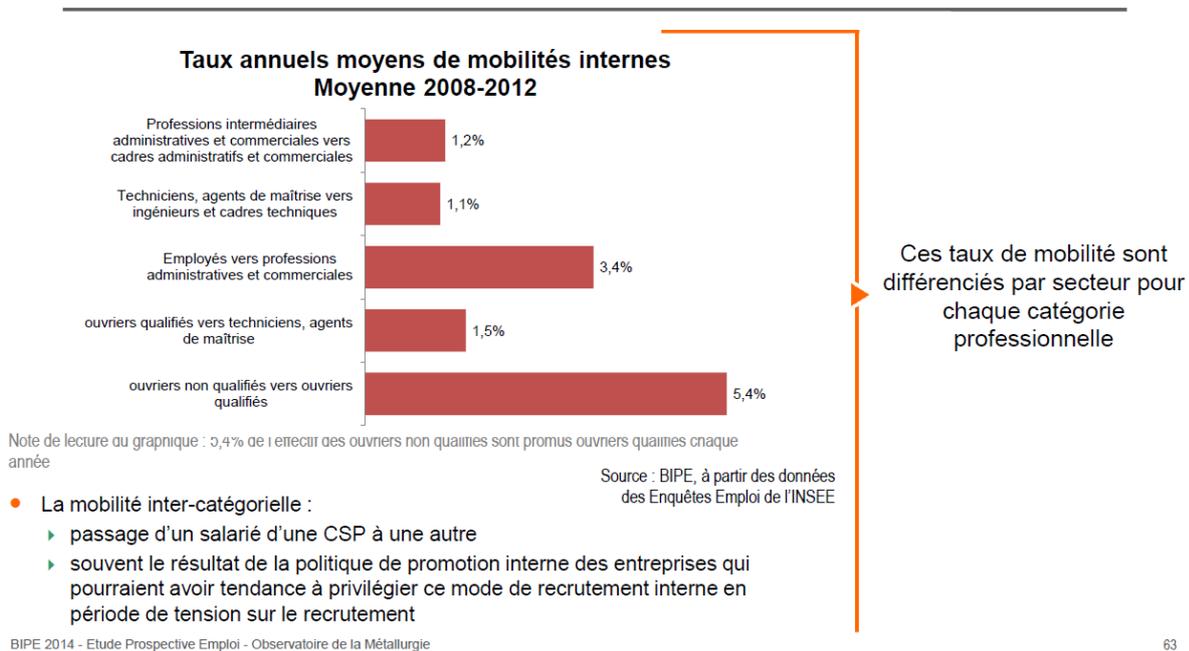


Figure 9 : Internal mobility benefits on unskilled labourers



Requirement needs forecasts

Recruitment needs resulting from previous findings are estimated at an average of 106,000 per year up to 2020 and 108,000 between 2020 and 2025. Skilled workers, technicians and engineers will be prevalently required showing a marked increase in competences requirements. Nevertheless, internal promotion policies, from unskilled to skilled positions, are privileged to external recruitment. This trend helps to compensate the number of recruitment at unskilled level. **In conclusion, 13,700 unskilled workers are expected to be recruited on an annual average basis until 2020, of which 8,600 will results from a compensation for internal mobility.**

Then, up to 2025 an average of 11,800 annual hires should occur. The sector that recruits the most should be those in metallurgy and metal products manufacturing. Companies tend to favorur the internal promotion of unskilled labourers rather than recruitment. Is it a need for competence or it is matter of trust? Are unskilled labourer previously recruited become a skilled labourer due to the increase in graduation levels for the new generations? Could additional training during the school course could help young people integration into the world of work?

Figure 10 : Recruitment requirements for metallurgy are estimated at 106 000 on average per year until 2020

Moyenne annuelle 2016-2020 (en milliers d'emploi)	Variations du stock d'emploi (1)	Départs à la retraite (2)	Autres Mobilités (3)	Mobilités internes		Recrutements externes
				Départs (4)	Arrivées (5)	Ensemble (1+2+3+4-5)
Cadres administratifs et commerciaux	-0,2	1,5	5,2		0,7	5,8
Ingénieurs et cadres techniques	1,7	4,2	15,9		3,0	18,8
Professions intermédiaires administratives et commerciales	-0,5	1,3	3,6	0,7	2,7	2,5
Techniciens, agents de maîtrise	-1,8	6,4	27,1	3,0	7,0	27,8
Employés	-3,8	1,6	3,7	2,7		4,1
Ouvriers qualifiés	-5,4	10,6	30,1	7,0	8,6	33,7
Ouvriers non qualifiés	-9,5	3,5	11,1	8,6		13,7
Ensemble	-19,4	29,2	96,6	22,0	22,0	106,3

Figure 11 Recruitment requirements for metallurgy are estimated at an average of 108,000 per year until 2025

V | SYNTHÈSE DES RESULTATS ET BOUCLAGE MACROECONOMIQUE


Dans le **scénario Pacte**, sur la période 2021-2025, les besoins annuels moyens de recrutements de la métallurgie sont de 108 000 emplois en moyenne

Moyenne annuelle 2021-2025 - Sc. Pacte – Hypothèse 1 pour les départs à la retraite : départ à la retraite à 62 ans en 2015, 63 ans en 2020 et 64 ans en 2025

Vision secteur

Moyenne annuelle 2021-2025 (en milliers d'emploi)	Variations du stock d'emploi (1)	Départs à la retraite (2)	Autres Mobilités (3)	Mobilités internes		Recrutements externes
				Départs (4)	Arrivées (5)	Ensemble (1+2+3+4-5)
Cadres administratifs et commerciaux	-0,3	1,8	5,1		0,7	5,9
Ingénieurs et cadres techniques	0,2	5,7	16,4		2,9	19,3
Professions intermédiaires administratives et commerciales	-0,4	1,5	3,5	0,7	2,1	3,2
Techniciens, agents de maîtrise	-2,0	7,5	26,2	2,9	6,6	27,9
Employés	-2,4	1,5	2,9	2,1		4,2
Ouvriers qualifiés	-5,1	12,5	28,4	6,6	6,5	35,9
Ouvriers non qualifiés	-6,1	3,2	8,2	6,5		11,8
Ensemble	-16,2	33,8	90,6	18,9	18,9	108,2

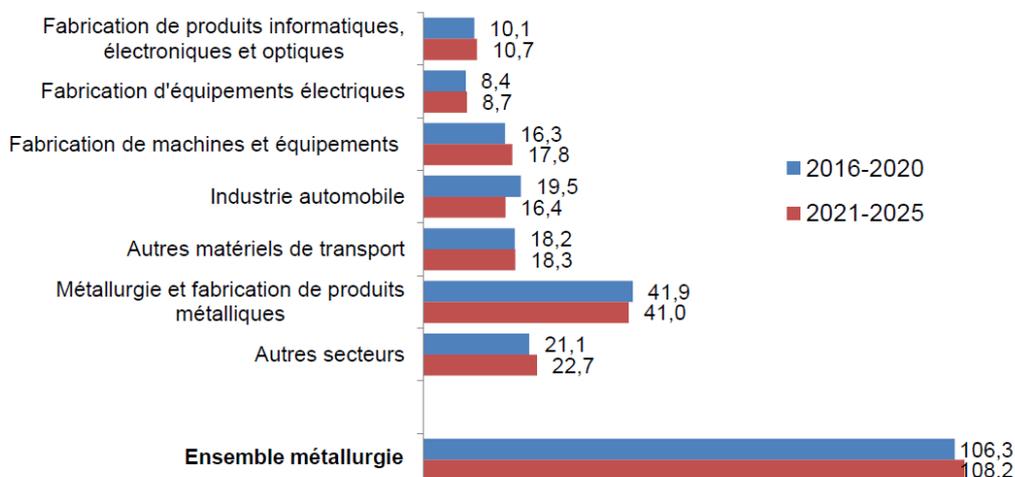
BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

Source : Projections BIPE 66

Figure 12 : The recruitment needs of metallurgy vary by sector

Moyenne annuelle 2016-2020 et 2021-2025 (en milliers d'emplois) – Sc. Pacte – Hypothèse 1 pour les départs à la retraite

Hypothèse 1 : départ à la retraite à 62 ans en 2015, 63 ans en 2020 et 64 ans en 2025



Note : Les résultats au niveau de l'ensemble métallurgie sont consolidés pour l'ensemble du périmètre de l'étude, la somme des besoins de recrutements de chacun des secteurs est donc différente du besoin de recrutement de l'ensemble métallurgie (les effets intra-sectoriels sont neutralisés)

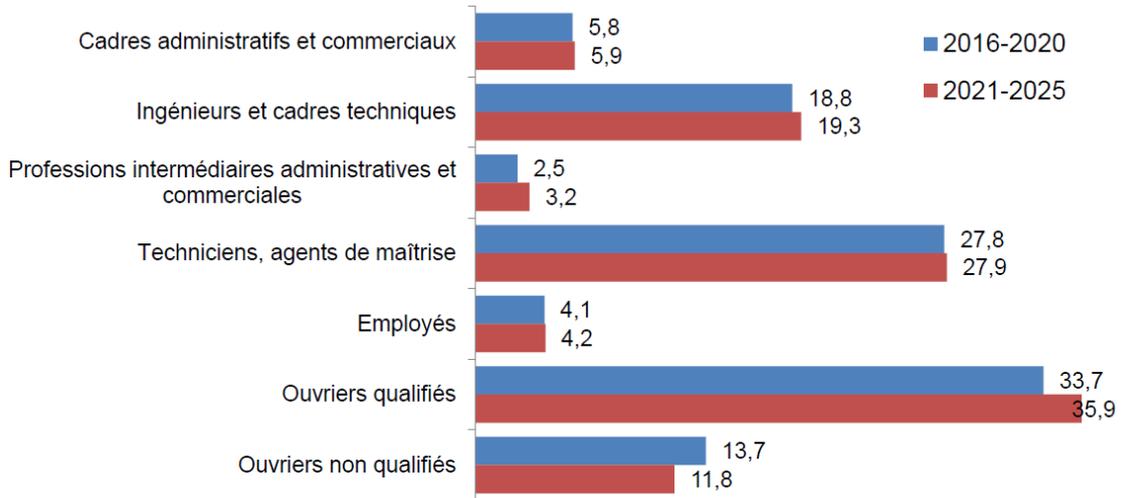
BIPE 2014 - Etude Prospective Emploi - Observatoire de la Métallurgie

Source : Projections BIPE 68

Figure 13 : Higher recruitment needs as qualifications increase

Moyenne annuelle 2016-2020 et 2021-2025 (en milliers d'emplois)
Sc. Pacte – Hypothèse 1 pour les départs à la retraite

Hypothèse 1 : départ à la retraite à 62 ans en 2015, 63 ans en 2020 et 64 ans en 2025



Source : Projections BIPE

SECTION 4. RESULTS OF INTERVIEWS

4.1. Relevance of the sector for low skilled workers

4.1.1. Relevance of the chosen sector for the selected target group

As we have seen in the previous chapters the current and expected changes in work and employment (as a result of energy, digital, demographic or so-called "tertiary revolution" transitions) lead to qualitative and quantitative reallocations of sectoral employment and to a risk of weakening of certain groups of people in the labor market, in particular the less qualified. Therefore, our objective in this chapter is to focus on "sensitive" activities, sectors and professions, in the sense that low-skilled employment is strongly threatened.

The operated choice of sector relates to two findings confirmed by the reference literature:

1. In the first place, we are observing a rise in the level of skills. The industry is particularly affected by the loss of low-skilled workers due to production and organizational changes (automation, robotisation, more complex methods and processes, quality assurance and labeling). But this is not a general trend because we are also witnessing the shift towards the "tertiarisation" of the economy with a growing demand for low-skilled workers in some particular sector (cleaning services, security services, personal care services for instance)
2. In the second place an increase of the level of education. In the 80s more than half of the French population was without a degree; today: 1 out of 5. We are observing a general trend of increase of the degree required to cover a particular job.

For the purpose of this study Céreq choose to focus on one of the above labor market transitions, namely technological and digital change, which directly affects the low qualified. We have selected two sectors where the impact is stronger namely the sectors of **metallurgy** and **logistics**. Both industries should face losses of low qualified labor forces, predominantly male and with fairly high average age. Likely, a part of these losses will be due to retirements and will be compensates with more qualified workers holding higher degrees. We assume that this phenomenon is largely due to the impact of new technologies and we have checked it with the help of few preliminary stakeholders' interviews.

We are also interested in establishing a dialogue with representatives of these two sectors with the aim of exploring the issues of replacement and qualification / requalification of human resources. In the second phase of the project we'll set up some workshops aimed to explore the current trends. The interviews reported in this chapter are issued by stakeholders first contacts that will be likely involved in the second project phase.

Even if both sectors are interesting for the purpose of the study they have very peculiar characteristics and differences. As much as logistic sector should to continue to recruit a relevant share of low qualified workers, metallurgy sector which was traditionally populated by low skilled workers, recruits today a majority of EQF level 5 (technical and professional *Baccalauréat*). In metallurgy there is a dramatic raise of the qualification level demand, the reasons of this raise made the object of our interviews.

There are also other background differences emerging from the carried out interviews:

- Metallurgy sector deals with a bad image in society. Its occupations are perceived as dangerous and physically demanding, in addition the industry is perceived at high risk of restructuring, closure or delocalization which is not provide great motivation to youth to enter this sector in economic uncertainty times. Nevertheless, if we look at highly industrialized areas such as Ile-de-France region, salary and contract conditions for the newcomers are more interesting than in other sectors²³. Metallurgy workers are stable, weakly exposed to turnover and with good career development perspectives; job rotation and professional growth allow a substantial mobility of workers inside the sector. It is quite common in the sector to move from small-medium subcontractor enterprises (with less payed job positions) to big industries. Generally speaking, metallurgy workers are not forced to quit the sector looking for alternative jobs in different fields.
- The logistics sector²⁴ is always in demand of short terms flexible contracts often supplied by private interim companies. Logistics workers are generally low qualified and exposed to high turnover rates. The sector is subject to seasonal workload waves for which is necessary to almost double the size of the workforce. The volatility of logistics jobs doesn't mean a lack of specialization. Logistics workers progressively increase their competences by performing tasks on the workplace; they remain in the availability of interim agencies that provide them with job posts on a quite regular basis. Longer contracts are possible for those workers that show to be particularly competent, reliable and resilient but always after a long sequence of interim contracts. Nevertheless a part of employees choose to continue to work with interim status because the cumulated salary can be higher than a single long-term contract; availability of job offers is enough to avoid long unemployment periods.

4.1.2. Kind of jobs that the target group develops in the selected sector

As we have seen job characteristics in the two considered sectors are quite different. **Metallurgy** main remark is that workers' necessary qualifications are rising "where we used to recruit CAPs²⁵ now we take more often workers holding a baccalauréat²⁶ or a BTS²⁷".

²³ Metallurgy workers hold in average an annual gross salary respectively of 29,355 € (*ouvrier qualifié*) and 25,514 € (*ouvrier non-qualifié*) against a global national average respectively of 27,183 € and 23 791 €. Data INSEE DADS 2012, elaborated by Céreq in "Portraits statistiques de branche".

²⁴ For sake of simplicity we take into consideration here only the storage component of the "transport and logistics" supply chain, which is also composed by incoming shipping of commodities from the production sites and outbound shipping of retail merchandises.

²⁵ Certificat d'Aptitude Professionnelle, corresponding of level V of French NQF and level 3 of EQF.

²⁶ Level IV French NQF; Level 4 EQF.

Metallurgy sector is no longer over represented by low-level qualifications. However, what it emerges by the interviews is that low qualified worker are still fitting a number of positions heterogeneously spreader on different subsectors. An example provided is those of medical sector polishers employed in the manufacture of artificial hips, or other kind of prostheses, and some jobs in the methane production sector. Out of some professional “niches” the main trend is for a gradual replacement of low qualified with upper qualified workers in many traditional jobs (manufacturing lines, mechanics, machining, boiler-making welding, foundry, forging, maintenance). A huge human resources need persists, which reflects the issue of how to bring all this so-called low-skilled population to the metallurgy trades, and how they can rise in skills and competences. Many different experimentation are put forward, for Instance the ADEFIM²⁸ select small cohorts of people in industrial niches in need of human resources, it carry out targeted training activities targeting low qualified who demonstrate to have relevant prerequisites. They were trained as part of an operational preparation then they were brought to the company and employment. Companies are starting to set up in-house schools where they will train those that doesn't have no qualifications; they will actually look at the personal aptitudes and characteristics more than hard skills. They train them to their trades, to their mode of operation. So in Metallurgy there is the combination of three elements that play together: the rise in certification skills, the permanence of some jobs that remain for the low-skilled and the ability to train those people who could enter the sector but they do not have the minimum required skills.

In the **logistics** sector, it lays a strong demand of low qualified workers. We have interviewed the responsible of one large logistics clusters in France (Pole Intelligence Logistique Southern Europe, located in nord-Isère, Auvergne-Rhône-Alpes Region). 60% of recruiters of this area report having difficulty in covering their recruitment needs. Jobs are in tension with always more offers for even few candidates. The labor market is also quite tense during seasonality peaks (i.e. preparation for Christmas sales). In logistics plants there is a managerial organization with many operational positions (low qualified) and relatively little management positions share proportionally. The main common job is “logistic operator” that require a great versatility and it includes different varied tasks (forklift driver, storekeepers, merchandise reception, order pickers, etc.). These workers have to hold CACES certification (Certificate of Fitness to Safety Driving) in order to safely drive the forklift. It is mandatory for any operator working in a logistics warehouse. There is no other qualification requested or expected. Even if there are professional titles at level III, IV, V²⁹, they are used very little used and checked by recruiters, candidates are not often trained to that. Logistics jobs are considered a "food job", recruiters want people capable to be operational in two days. There is very little interest to the validation of diplomas. Logistics workers come to the sector a little by chance, they did other things in life before, they were agents of production, in the catering sector, in the construction industry, etc. They show very heterogeneous trajectories sometimes marked by unemployment breaks. Logistics assures a quick recruitment for a short term flexible occupation that not always turns to be a permanent full time job.

²⁷ Brevet de Technicien Supérieur, Level III French NQF ; level 5 EQF.

²⁸ The association for the development of training in the metallurgy industry sector. It has also the task to collect and redistribute funding aimed to finance continuing training for the employees of the sector.

²⁹ Level 5, 4, 3 of the EQF.

4.1.3. Existence of 'black (underground) economy' in the selected sector and in these occupation types and steps to overcome this

The two considered sectors are not touched by underground economy occurrences. On one hand the two sectors are populated by large companies or by a network of subcontractors of these large groups. On the other hands the sector's labor market regulation systems are based on quite stable recruitment processes with quite low "extra-sector" mobility (in the case of metallurgy) or strong use of private jobs intermediators which rent labor force to companies on short term basis following the season cycles (in the case of logistics).

4.1.4 Problems of low skilled workers in finding and maintaining employment in the selected sector

As we have seen the **metallurgy** sector is characterized of three different components appearing together: the rise of the average qualification level, the permanence of some jobs that still are covered by low-skilled, and the need to rapidly increase the competences of those job seekers that could join the industry but who do not have exactly the required education level to enter. The metallurgy sector is characterized by high internal job mobility; employees are affected by vertical mobility (ascending careers) or horizontal mobility (passing from a small-medium company, often a subcontractor, to a bigger firm). Ascending mobility is supported by companies' continuing training offered to low-skilled high-experienced workers. As a result, many companies find themselves with significant seniority of their workforce and with great internal mobility (examples of career progressions from blue-collar position to medium-level manager of the same company is quite common). Nevertheless this type of upward mobility does not help to create opportunities for low-qualified new-comers

because, at the same time, the qualification upgrading effect is playing. Replacement recruitments will be made at a higher level of diploma³⁰.

In addition the sector lies exposed to restructuring and delocalization events which contribute to limit its attractiveness. For this reason the UIMM³¹ is working on three different levels:

- Work to the image of the industry. Workers do not spontaneously come to work in the industry even if there are jobs availability (the reasons are societal). Large groups have made it easier to find people but when you go on small medium business is a lot harder.
- Develop work-based training as privileged recruitment track. In almost all French departments there are industrial apprenticeship training centers³² coordinated by the branch with the aim of ensuring that young people can be trained on the skills needs by

³⁰ The UIMM observatory of labour market have identified the need to train 110 000 employees per year until 2025 in metallurgy. Only in the Auvergne-Rhône-Alpes Region the needs correspond to 29,000 employees, with 59,000 employees by 2025.

³¹ Union des Industries et des métiers de la métallurgie ; Union of Trades and Industry of the Metallurgy.

³² Centres de formation des apprentis industriels (CFAI)

the enterprises. The high recruitment rate (77% in average) makes these training schemes attractive for youth.

- The last actions put in practice at the national and territorial level are the establishment of local work-based training basins. For example the nuclear industry around the Tricastin area³³. A very specific thinking is underway for the definition of an industrial training center in this area.

In the **logistics** sector the main challenge is to attract as much labor force is needed. Even in this case the image of the sector plays a crucial role. Logistics jobs are very often, and not without a reason, considered at low revenues with high turnover rates and heavy workload. That is way job opportunities for low-skilled workers are always available. The first contact with the logistics industry normally passes through enrollment in some private interim provider agency which supplies the industry with the necessary labor force³⁴. Short-term interim contracts are commonly widespread; workers generally renew several time these short contracts before having the opportunity to get access to more stable statuses³⁵. Some workers choose to keep their interim flexible status for many years since the economic conditions accorded for these kinds of contracts can be more advantageous than fixed contracts. The high job turnover and job offer availability assures against long joblessness episodes.

As there is tension on the recruitment market, the employers often consider to going seeking different publics. Cooperation schemes are set with Pôle Emploi (French public employment service) in the event of a new large logistics site opening where is necessary to recruit 50-80 people quite rapidly. Pôle Emploi organizes recruiting workshops including job posts simulations, reproducing the tasks to be done and the objectives to be accomplished. All job seekers of the area are brought, whatever their background diploma or previous work experience is. They test job seekers aptitude, self-commitment, reliability, rather than hard skills. This opens up to more recruitment opportunities for the industry. If people have a potential, they will learn the technical work components directly on the job which remains fairly simple and accessible.

³³ The Tricastin Nuclear Power Plant consists of 4 pressurized water reactors (PWRs). The power plant is located in the south of France (Drôme and Vaucluse Departments).

³⁴ The logistics interviewed experts reported that the logistics industry rarely set up recruitment agreement with public employment services (Pôle Emploi en France). Private agencies are often specialized in the logistic sector and capable to provide experienced human resources rapidly and effectively. Nevertheless PESs are sometimes involved in the event of the opening of new large size logistics plants requiring large initial recruitment campaigns.

³⁵ In general, when an employee starts to collaborate with a company, the interim contract is pushed until its legal limit before giving the worker the opportunity to get stabilized (if he/she wishes). Permanent contracts are never signed before 2/3 years passed in the companies with flexible contracts.

4.2. Training, Participation, Engagement and Recruitment

4.2.1. Academic competences/skills needed to work in the selected sector, in the kind of roles that low-skilled people are employed in

The French national vocational system is based on a quite complex system of “certifications” provided by the State³⁶ itself that has its roots in the establishment of the first (and still used today) 1968 qualifications framework. The framework provides solid indications about the competences and skills that have to be certified in order to get access to a specific profession or set of tasks. The qualifications standards are designed and constantly renovated by State sectoral commissions (CPCs) also composed by representative of the industry and Trade unions. If we look at the minimum level of diploma³⁷ required in order to doing a job we can find a quick indication of the list of competences and skills required in the considered metallurgy and logistics industry. As explained above, people without diploma very hardly are recruited today in the metallurgy sector and, what is more, being awarded with a EQF level 3 degree (i.e. CAP, BEP) doesn't guarantee anymore an smooth transition to jobs. The minimum requisite has been progressively elevated to the Professional Baccalaureate (EQF level 4). The issue today is how to support young job seekers to acquire the minimum professional standards and certificates.

Non-exclusive list of metallurgy industry EQF level 3 trainings³⁸ :

• Production facility operator
• Maintenance Officer, Building and Related Materials Industries
• Boiler work
• Welding
• Coppersmith
• Cutting and Bunking tools operator
• Metallic molds operator
• Thermal insulation and acoustic insulation operator
• Shaping and cutting materials
• Armory Manufacture and repair
• Extinguishing devices verifier agent
• Foundry
• Manufacture of cutting instruments for surgery
• Mechanical production
• Maquettist

In logistics an opposite approach is driving the sector. The high demand of workforce makes necessary to open the selection for recruitment to a as wide as possible range of job seekers.

³⁶ The main certifying national authorities are the Ministry of National Education in particular for initial VET and the Ministry of Labor for continuing VET (in particular addressed to adults, disadvantaged groups, unemployed).

³⁷ Certificat d'aptitude professionnel (CAP), Brevet d'Etudes Professionnelles (BEP). Level V of the French qualification framework ; level 3 EQF.

³⁸ REFLET Data Base, CEREQ.

The logistics industry looks very little at the hold diploma and much more on personal feature of potential candidates. The nature of contracts (short term and recruitment by interim) makes also the selection process quite easy and straightforward. Nevertheless logistics low-skilled profession is quite well codified in the French qualification framework and subject regular updates.

Non-exclusive list of logistics EQF level 3 trainings ³⁹ :

• Logistics operator
• Mobile structures assembler
• Professional Packager
• Security agent
• Technical agent for security prevention

4.2.2. Current Training in the sector for low skilled people

Metallurgy

The Metallurgy interviewed expert reports two main modalities of branch-based training for low-skilled :

1) At national level, the development of CQP certificates, which allows the sector to evaluate and certify the competence level for the employee. It was managed by the branch with the involvement of territorial CQP evaluation jury. The CQP recognition is shared by entrepreneur's organizations and trade unions and included in national bargaining contracts frameworks. CQPs are also more and more recognized by the State (under specific demand of the certifying entity) though their progressive recording in the National Register of Vocational Qualifications (RNCP⁴⁰). CQP acquisition by the less qualified workers is a formidable tool of social and professional promotion inside the sector and can open up to more higher hierarchical positions inside the production companies being a channel of career promotion.

The *Certificats de Qualification Professionnelle* (CQP) is issued by particular trades and sectors are quite unique among the French national qualifications panorama. Since 25 years they are common currency on the French labour market but only since 2002 social partners organisations (especially industrial and services branches representatives) in agreement with the State, decided to open the national framework up to the branches' CQPs. They are not classified by level. To some extent they are in the Register but not in the "national qualification framework". Social partners strived for more flexibility of the system and more recognition for their CQPs. The creation of the new qualification Inventory in 2014⁴¹ provided branches with a

³⁹ REFLET Data Base, CEREQ

⁴⁰ Registre National des Certification Professionnelles

⁴¹ Law no. 2009-1437 of 24 November 2009 relating to guidance and lifelong vocational training, required the CNCP to identify "qualifications and accreditations which correspond to the transversal competencies used in the workplace" (article L 335-6 of the Education Code). What it is looking for exactly is any means of certifying vocational competencies which is not linked to a qualification (an occupation which is recognised in an industry-

new tool for the recognition of “parts” or “blocks” of skills having a particular market interest. Branches can now choose to undertake full certifications accreditation in the RNCP or “shorter” certifications (blocks of skills) in the Inventory.

2) The development of Industrial apprentices training centers (providing State recognised degrees) is considered an efficient way to select and recruit the better human resources available. So the sector organisation (UIMM) is working to develop these training centers at local level. One of the objectives is to create as more work-based training opportunities as possible and, on the other hand, to recruit former professionals as coaches, bringing the training closer to the reality of the company. UIMM is working intensely on communication and capacity of attractions: work-based training (apprenticeship) is a very efficient educational opportunity for low qualified and low skilled people. Rather than consider the choice of apprenticeship as the result of an education failure, it is better to see in it a chance not to miss in order to improve chances for professional integration. A work-based knowledge, a “paid-and-free” study opportunity, an excellent insertion rate, diplomas delivered by the Ministry of National Education, the industrial apprenticeship, it today like an insurance of a training adapted to industry needs cumulating a significant experience in business⁴².

Logistics

In the logistics sector there is no qualification requested or expected by recruiters. Even if there are professional CAP degrees (EQF level 3) or *Baccalaureat Professionel* (EQF level 4) they are very little used and people do not train at that. The sector organizations are making efforts in order to promote more qualification and validation skills but they are not heard a lot by recruiters or employees (not even for continuing education) which priority is to recruit as much workforce as necessary in a time-efficient way. What stays mandatory for any logistics operator is CACES certification (forklift driving license) supplied widely by many different training organizations. It can be even obtained at the workplace, hundreds of companies are accredited to issue a valid license for exclusive internal use (company warehouse). Renewal of CAPES takes place every 3/5 years.

The logistics sector benefits of its own training organisation : AFTRAL⁴³. AFTRAL is the first organization for initial and continuing vocational training in Transport and Logistics in France and in Europe, with 100 centers throughout the metropolitan area and overseas, more than 2,000 employees including 1,000 trainers who all have a Logistics Transport experience, 44 apprenticeship training centers, 24 youth schools. AFTRAL provides initial training from CAP

level agreement), which is not ranked in the French classification of 1969 and which usually involves short courses. However, Law no. 2014-288 of 5 March 2014 relating to vocational training, employment and social democracy introduced a new register, “the Inventory”, to identify these types of qualifications (Meliva, Paddeu, Veneau, 2016).

⁴² Information taken by UIMM-CFA network in Center Region of France (website : <http://www.cfai-centre.fr/jeunes/lapprentissage-industriel>)

⁴³ The French AFTRAL acronym means: « *Apprendre à se Former en Transports et Logistique* », learn to self-train in transports and logistics.

to bac + 6⁴⁴ (within its network of higher schools). It provides training for all staff who carry out a logistics-transport activity, whether they are drivers of heavy goods vehicles, handling or lifting equipment, senior technicians, managers or managers, but also for all those who want to reconvert or evolve to the Transport and Logistics sector. AFTRAL promote on his website several training in logistics addressed to low skilled workers such as CAP Logistics operator (1 or 2 years in internship status). However these degrees seemed to be not mandatory to access the industry.

4.2.3. Training on companies for low skilled people: motivation and barriers

Metallurgy

The main challenge for the metallurgy sector is to contribute to the raise of competences level of the potential sector workers. It is necessary to provide the target group with opportunities of training and retraining. With the help of OPCA⁴⁵ funding the UIMM work at the constitution of training cohort of people for professions where there is lack of human resources. There is an agreement with Pôle Emploi aimed at select the fitting low-qualified job seekers having relevant prerequisites for this kind targeted trainings. They were brought towards the companies and some of them went into employment. Other similar recruiting programmes are oriented to disadvantages categories of people including NEETs. These experimentations can include for instance mobility experience abroad. One experimental programme in Ardèche department had the objective to develop mobility willingness in young NEETs in order to push them to move to near regions where there is a stronger demand of workforce.

The internal evolution of low-skilled workforce to more skilled jobs is implicit in the nature of metallurgy sector. In the meantime, first access to the industry is more and more supported by the sector's CFAs with very satisfying insertions rates compared with the traditional vocational institutes. What was pointed out is that state funded "traditional" vocational education will always have a gap between the provided training and the reality of the labor supply.

As example, a brand new CFAI is being created in Ardèche Region (10 million euros of investments) and developed in strictly cooperation with the territorial authorities in order to keep coherence with the general regional training policies. A 6-months preliminary study was launched to identify: the skills needs by industrial enterprises; the existing training offer on the territory and on the bordering territories; the level of between the two.

This UIMM institutes should be also charged to organize the continuing training offer where there is a great need for companies. According with the most recent continuing training regulations the employees should be permanently trained to remain "employable" and capable to face technological evolution. A great part (around 60%) of these training courses is provided

⁴⁴ EQF level 7.

⁴⁵ OPCA (Organismes paritaires collecteurs agréés). They are sector bodies responsible for collecting the funds for continuing vocational training and for financing the training of employees. Decree No. 2014-1240 of October 24, 2014, following the law of March 5, 2014 on vocational training, specifies the new operating procedures of OPCAs, particularly for professionalization actions, the training plan and the personal training account (CPF) specifies the distribution of the single contribution of the companies.

by machine manufacturers companies, they deliver a machine and they also provide the necessary training on the new machine.

Continuous training also embraces broader topics (maintenance, electro-technics, boiler-making. For this kind of needs UIMM's training centers created individualised update training opportunities. The employees can be trained from three hours until 360 hours in order to acquire a certification. The training becomes more flexible and can involve workers of different levels and who start the training at different times. Demand is very heterogeneous going to some specific skills for (i.e. use of very specific machines), to broad subjects where there are massive needs (i.e. maintenance competences update) for which there is a volume effect (automation and robotisation only amplify maintenance needs).

Logistics

The logistics interviewed expert put forward two additional challenges that make object of the territory company's cluster she represents:

1) The logistics cluster of Rhône-Alpes Region is working at the establishment of a "Skills Passport" with the aim of securing career paths and streamlining recruitments focusing on prevailing work situations. The idea is to observe "logistic operators" in different companies in order to establish the common points of the various assignments to establish a common standard. Companies' HR responsible validate the skills included in this standard in order to create the "skills passport" common to all the companies represented in the cluster. This passport is aimed to improve mobility, improve quality and reliability of the interim workers. During the recruitment process the employer can check that other companies have validated the passport so he knows that he can count on the quality and competence of this person. This tool doesn't provide yet a real certification but it is recognised inside the territorial cluster and can validate key logistics operator competences for that group of companies.

2) A second issue the Rhône-Alpes regions cluster is facing is the question of middle management. It is quite common for particularly experienced workers to be promoted in middle management posts and team leaders. These workers usually holding low-level degrees have no managerial background and this cannot be invented. The cluster organisation provides continuing education aimed to accompany these people who rise in responsibility and support them for the taking of managerial posture. The kind of training is funded by inter-OPCA

4.2.4. Funding the training

Metallurgy

Training investments in metallurgy sector, like any other sector in France, are based on a mix of different sources: national funds, regional funds for vocational education (including European structural funds), private funds collected via the national taxes system and managed by the sector collecting organization (OPCA) or Chambers of commerce, trades and

agriculture⁴⁶. Different blends of these sources are possible, regulated by different legal instruments depending by the kind of trainees (youth, adults, employees, unemployed, disadvantaged groups), the type of training (initial or continuing VET, apprenticeship).

In metallurgy apprenticeships (and professionalization contracts) are financed by an operating budget composed by apprenticeship tax incomes, regional funds, and OPCA funds (for the continuing training part). This budget is used for training investment and to open to trainees the access to company's equipment which evolves rapidly due the technological innovation, and which is not possible to reproduce in training center context.

Logistics

Logistics sector work more or less in the same way in order to train the stabilized workers. The main difference is that continuing training is supported by "inter-OPCA" funds, depending by the nature of company business: OPCA "transports et services" (transport, cleaning services, travel and tourism agencies); Intergros (wholesale trade and international trade), FORCO (trade and distribution). One major issue emerges, to what extent interim low-skilled workers which are a majority part of the workforce of the sector, can have access to training-retraining opportunities? For sure AFTRAL is involved in the training of these resources. The hypothesis is that only the more active interim and unemployed workers could have access to continuing training, under personal initiative. Since the law of March 5, 2014 they can benefit of their personal training account (CPF)⁴⁷.

4.2.5. Difficulties and barriers to achieving a higher participation rate from people belonging to the target group?

The access to the two considered sectors for low skilled or low qualified workers in one of the top priorities of national and local policy makers. Particular felt in France is the problem of NEETs which they reach very important rates in France. Looking at some Céreq recent data (Génération 2013 Survey), 5% of youth having left initial education in 2013 and interviewed three years after (2016) declares to be inactive (not in education, not in employment nor looking for work) but this rate elevates to 12% for the youth without any diploma⁴⁸.

The metallurgy sector is seeking human resources but at higher level of qualification and it is committed to experiment new form of training in order to elevate this level because labour demand is still important in this sector. Logistics sector is important recruiters of low-qualified

⁴⁶ Two main taxes are currently operating for financing training : Tax for Apprenticeship and the Contribution for the Continuing Training of Employees.

⁴⁷ The Personal Training Account (CPF) is open to anyone aged at least sixteen years, either in employment, looking for a job or supported by PES in his/her professional project.

⁴⁸ Céreq (2017), *Quand l'école est finie, Premiers résultats de l'enquête génération 2016*. Marseille.

workers. For this reason the territorial services of the State (DIRECCTE⁴⁹) are interested and directly committed in supporting the implementation of big firms (Amazon, FNAC, UPS) in some particular territories where the presence of NEETs is higher.

The support to establishment of companies is not financial (which is forbidden by European regulations) but more legal (building licensing, authorizations), create synergies with local authorities for developing transport services for workers, and of course helps to recruit workforce. DIRECCTE makes agreement with national PES operators (Pôle Emploi, Missions Locales, Cap Emploi) who intervene on the recruitment process. When a company is a single interlocutor all operators work together for training and recruitment plans.

For this kind of large recruitment processes, qualification issues are less important than behavioral issues. The candidate are selected on the basis of their personal attitudes and liability (provide guarantees to be at work on time and show to have a solid personal organization is more important than specific competences that can be easily acquired in the “testing-training” initial phase). Thus, the main barriers for the access to this sector are social-based and linked with the job-seekers background more than on skills. These characteristics directly impact the capacity of these specific categories to resist to sometimes difficult working conditions often not well remunerated. As counter-weight these big logistics brands should also work on providing better conditions for workers and start to ameliorate the image of the sector regarding not attractive wages, workload and contracts.

4.2.6. Factors to motivate low skilled people to complete their training

The motivation for training in the two considered sector can be different. As we have seen further training is the necessary condition to enter the metallurgy sector and pre requisite for internal career promotion will see in the next chapters how automatization and digitalization is impacting the need of training and retraining of the young and adult workforce.

Logistics sector is more tailored for low-skilled workers. The high demand encourages workers to go towards this sector but training is not a priority for the employers that are in need of instant operational resources, provided by interim agencies on a flexible basis and capable to absorb seasonal peaks. AFTRAL, the sector's training institute, and many other public and privates institutes provide logistics qualifications (CAP, BEP and baccalaureate) but they are not strictly necessary, for the access in the industry (except for the CACES certificate). Nevertheless sector based offer for initial and continuing vocational training is large and can be benefited in the framework of companies' training plans or personal initiative with the use of CPF credits.

⁴⁹ Directions régionales des entreprises, de la concurrence, du travail et de l'emploi. Regional Directorate for Entreprises, Concurrence, Labour and Employment.

4.2.7. Monitoring job outcomes

Different organisations produce in France indicators capable to monitor job and training outcomes. Out of the national statistics system⁵⁰ and regional observatories⁵¹, the economic sectors are normally equipped with their own labour market observatories.

The Prospective and Analytical Observatory for Metallurgy Professions and Qualifications, is a joint body set up within the framework of the National Joint Employment Commission (CPNE) of metallurgy (tripartite body). Its mission is to enlighten the social partners, the companies and the actors concerned on the evolution of the professions and the qualifications of the metallurgical industry, the practices and tendencies observed in matters of recruitment and mobility, the evolutions of the employment and skills needs. The observatory helps to put in place a forecast management of jobs and skills (GPEC). It provides tools for observation, analysis and expertise of trades and their evolution. It provides information to employees for skills development, to prepare for changes in trades and industries especially those which the branch will need⁵².

Similarly the Transport and Logistics sector have its Observatory for Prospective trades and qualifications under the authority of National Joint Employment Commission (CPNE) Transports and Logistics⁵³.

Both observatories produce annual reports on the state of human resources supply and demand in the sector and on the evolution of markets and jobs

4.3. Skills gaps and barriers.

4.3.1. Main gaps in employability (transversal -e.g. non-job specific skills- and personal skills) in the target group?

When we talk about low qualified people in France we often talk about very heterogeneous groups but we can say with similar socio-demographic characteristics. Céreq available quantitative data can help us to describe them. If we look to the youth generation having left initial education in 2013, the share of people having left without any degree represented the 14% of this generation while the 13% only achieved the first level education degree (CAP-BEP corresponding to EQF level 3; the average age of these group is between 18 and 19 years old).

Looking at socio-cultural origins, respectively 27% (without degree) and 33% (CAP-BEP) of them are belonging from working-class families; 19% (without degree) and 12% (CAP-BEP)

⁵⁰ Ministry of National Education (Department of Evaluation, Foresight and Performance – DEPP); Ministry of Labour (Department for research, studies and statistics - DARES); Céreq.

⁵¹ The French regions have developed local observatories of the labour market that since 25 years are assembled in a single national network named CARIF-OREF network (<http://reseau.intercariforef.org/>).

⁵² <http://www.observatoire-metallurgie.fr/observatoire>

⁵³ <http://www.optl.fr/>

where resident in disadvantaged urban areas; 17% (without degree) and 13% (CAP-BEP) have parents born abroad⁵⁴.

The origins of these workers can at least partially explain some non-job, non-skills specific barriers. The accessibility to the workplace or the training place can be sensible issues for those who are not equipped with personal transports means. In some cases company venues are situated in industrial districts quite far from the residence areas (in particular in the Paris region).

In addition, several scientific works demonstrate that young generation with abroad origins (the most common national origins are from Maghreb and Southern Europe countries) are discriminated on the French labour market. They are affected by the so-called "double penalty"⁵⁵: the difficulty to find the job and, once they manage to get it, very often it is of lower quality.

4.3.2. *Main gaps in academic skills and necessary skills in the medium future (5-10 years)*

Metallurgy

Nearly 850,000 people work in a metallurgy industry in France, more than half are workers and technicians. Of these, nearly 90,000 are 55 or older. Demographic reality like the rapid evolution of the means of production, require new means to train the operators and technicians of tomorrow.

Production and organizational changes induced by technology are affecting traditional jobs (fitting, processing, machining, precision grinding, etc.). Industry machines are becoming more and more digital, manufacturing and production skills are becoming less important than digital machine operator skills or maintenance skills. Sector newcomers are recruited at higher levels of diplomas and the industry is investing in requalification of adult workers at the new technologies.

The industry is developing continuing training platforms in cooperation with the local authorities. For instance in Ile-de France Region, the aviation company Snecma-Safran have created a consortium with local authorities named «factory of the future" managing a training platform that will provide both initial training and rise in the skills of the staff who are in place. Located in Bondoufle (Essonne) and inaugurated in September 2018, this training center will host 300 work-study trainees for 3-year courses, as well as 300 people in continuous training

⁵⁴ The national averages of these indicators are : 23% belonging to working-class families, 10% residing in disadvantaged urban areas, 14 % having parents born abroad (source Céreq 2017).

⁵⁵ Brinbaum, Issehnane (2015), *The early careers of the second generations: a double ethnic penalty?*, Trainin and Employment, n. 119, Céreq, Marseille.

in new production methods: networked machines, connected objects, additive manufacturing, augmented reality, collaborative robots, tablets⁵⁶.

Logistics

In logistics the process of automation is progressing slowly. This is what emerges from the interviews had with sector stakeholders. Automation of processes in logistics platforms requires important investments that not all the companies, the small and medium in particular, are capable to cope with. The simple replacement of the human with the machine is far to come. In general the industry is targeting more “soft” automation like the implementation of the so-called Cobotic (collaborative robotics) aimed to reduce the heavy load carrying, but there is always need of a human intervention. Total automation (without human intervention) is not yet relevant. The need for manpower remains very strong.

On the need for skills of human resources impacted by automation/cobotics, it is difficult to have a setback to estimate the changes. Companies accept with difficulty to be observed. Nevertheless in terms of warehouse processes the main innovation has been to pass paper-based processes to the uses of tablets and bar-codes readers. The impact on workers skills is still limited.

4.4. Good practice and automation

4.4.1. *Established good practices and policies which have helped achieve the involvement of the target group within the sector and best results*

What clearly emerges by the carried out interviews is that there is no “miracle solutions” for bringing low qualified workers to industry. Some good results are achieved with a mix of measures and actors able to accompany different segments of the target population.

The metallurgy OPCA makes projects for supporting small cohorts of low skilled workers and to specialise them in some “niche” professions where it still exists demand (i.e. industrial painters). The companies carry out recruiting campaigns also oriented to low qualified⁵⁷ but what clearly emerges is that “savoir-être”, meaning the way to behave, the level of commitment and liability of the person are the most evaluated aspects. The necessary technical skills especially for the new entrants will be transmitted on the workplace.

Some projects (financed with national funds) are aimed to develop a mobility attitude (sometime even a job at 30 Km distance from home is seen as an obstacle for these categories of people). These projects target economic disadvantaged young individuals and focus on setting mobility schemes abroad for study or work, help them to exit their native environment and help them to consider to enlarge their spectrum of job and life opportunities.

⁵⁶ <http://usinedufutur.safran-group.com/digital-service-de-lhomme/>

⁵⁷ In some circumstances collaborating with PES or private hiring services.

The metallurgy sector is also working for elevating the competences of adult workers and upgrading them in their careers. This process is strictly related with technological evolution of industrial process and we can assume that posts left by more aged workers only partially will be covered by younger workers with equal education level. It is not so evident that internal upskilling process⁵⁸ could help to alleviate the lack of job opportunities for low skilled.

In order to keep the pace of technological innovation initial training appears to be a key element. Specific policies are developed by the both sectors metallurgy and logistics. On one hand partnerships are built with state VET institutes at territorial level in particular industrial areas or territorial economic clusters. On the other hand sector private institutes specialised in the promotion of work-based and apprenticeship learning (CFA) develop training opportunities axed on the specific competences demand coming for the enterprises on the territory. These schools are equipped with similar tools and machines to those used in the companies and frequently updated. The set-up of pedagogical contents is flexible and easily adaptable to companies needs they can range from the training for specific niches of workers very specialized but for which there will be demand (i.e. cold stamping, polishing) to the training of large cohorts of learners on very widespread trades but subject to rapid evolution (i.e. industrial maintenance, machinery).

4.4.2. Probability of automation in the next 10-15 years of the low-skilled jobs in these sector:

4.4.2.1. Jobs or activities subject to automation in the next 10-15 years?

Automation is already implemented in the French industry. Nevertheless this not translates automatically in the net loss of jobs⁵⁹. We have seen how logistics sector is targeting more “soft” automation such as Cobotic solutions aimed to reduce heavy load carrying, but there is always need of a human intervention

In Metallurgy cobotics equally aims to reduce repetitive tasks with low added value, or maintenance activities in dangerous or consuming conditions.

What is more, automation of process can in some circumstances be associated with more quality of products. Production lines are nowadays more automated avoiding many human errors, checking thoroughly inconsistencies with automatic procedures and delivering more quality. Automation means also more productivity that can lead market expansion and more need of recruitments (this was the case of IVECO bus producer that after automatization of its production lines expanded its market and recruited 230 new employers in the last three years).

Job is not disappeared, it is just changed but also society is changed. There is a natural adaptation of society to technology, and where we thought we had to train people, in reality,

⁵⁸ Often these upskilling processes passes thourg sector CQPs conceived and territorial level of even company level.

⁵⁹ A recent BIBB study (Lukowski, Neuber-Pohl, 2017) clearly demonstrates that automatization of industry do not destroy jobs but transform them in more demanding tasks. Future research should focus on these transformations.

they are training themselves and we just have to adapt their job to meet them "In the future people will be more likely to use a tablet than to read and write⁶⁰".

This is not means that the authorities and the governance bodies at all levels have to ask themselves how to support these change and how to lead the most disadvantaged categories of people to work interpreting the mutation as a creator of new opportunities. As a matter of fact we know what the tasks are in tension (Electro-technic maintenance, welding for boiler making, electronics, production line control and maintenance, etc.).

4.4.2.2. *Impact on training centres and the way of training of low-skilled people*

Training centres have to work mainly on the integration of “company codes” in the understanding of young newcomers, this means to work on soft skills and “savoir-etre” in the first place. The have to work to develop autonomy and maturity because repetitive tasks in industry are deemed to disappear in favor of more creative tasks (i.e. problem solving) at all level.

Apprenticeship is the most important way for youth to enter the company and get in touch with the industry environment (even if we have seen that doe logistics the first contact with the work environment takes different paths).

Learning techniques are today based on digital simulations and augmented reality that permit to recreate work conditions in a cost efficient way and therefore permitting to rapidly update learning to last machine used in the industry. Training in automation and robotics evolves over time and for so training on expensive machines has to be collaborative and based on shared platforms. Open remote virtual training is necessary and can democratize access to training. Machines located in a single place are accessible for different learners in distance connection for programming; technical learning and setting in link with the production chain, etc.

Digitalization at home (digital tablets), open and distance learning also open more opportunities for peer-to-peer training for example having experiences feedbacks, be alternatively trained and trainer.

4.4.2.3. *Impact on organisations*

We have seen all along this chapter how it is raising a collaborative dimension among institutional actors, between training centers to share machines and trainers, between public training institutes and companies, between public authorities and companies (implementation assistance), between trainees in peer-to-peer, between trainees and professionals. It is crucial to shape the initial training as close as possible to industrial needs but it is also crucial to attract enough human resources to train. Metallurgy and logistics have the same problems of image and attraction of youth. They have to work on explain to large public how the professions are evolving and what are the potential benefits of a career in these sectors.

⁶⁰ Verbatim from an interview.

Even if low qualified and skilled in many cases cannot be recruited as they are, the attention for strategies of attraction of these categories and strategies for properly train them to the need of the industry seems to be taken in high consideration.

SECTION 5 CONCLUSIONS

Increase of the level of qualification and a modification of the necessary skills. Companies are generally committed to support the rise in competences and skills of their employees. Skills for (digital) machinery control and maintenance are deemed to replace labor intensive, repetitive and low added value tasks. Nevertheless, this clear outcome is not enough to infer a global reduction of available jobs, nor a dramatic fall low skills jobs. New low-skilled professions can appear and some old professions based on traditional skills will be preserved.

In the **metallurgy industry**, it is anticipated that certain skills will be less widely demanded but that there will always be availability of jobs for low-skilled workers (in particular in companies with more targeted and small-scale productions often with high added value). In addition, the industry could not simply renounce to a part of its potential workforce, for this reason it is studying the way to support low-skilled labor forces (adult workers but also youngest newcomers) to be trained or retrained at higher level. Apprenticeship and adult educations are the two main political instruments developed at all level: national, regional and industry level. What clearly emerges is that companies are more interested to “savoir-être” and personal features. The way to behave, the level of commitment and liability of the person are the most evaluated aspects. The necessary technical skills especially for the new entrants will be transmitted on the workplace (this trend is also true for logistics sector).

The impact of digitalization is high in metallurgy. Production and organizational changes induced by technology are affecting the medium big industry and many traditional jobs (fitting, processing, machining, precision grinding, etc.). Industry machines are becoming more and more digital and connected, manufacturing and production skills are becoming less important than digital machines operator skills or maintenance skills. Typically the maintenance jobs are transforming with technology, remote maintenance on connected objects and machinery is developing. Different territorial industrial districts are even more connected and exchange services with remote connections, the maintenance profession include new digital and communication oriented skills.

The **logistics sector** is also changing but is still one of the main providers of low-skilled jobs. Warehousing work is only partially assisted by cobotics. Likely in the next future it will be more automatized but this transformation will be slow and will touch big companies in priority. In many SMEs the transition will be longer and probably never completely accomplished. In addition new customer and delivery services will help to keep high the need in low-skilled jobs. The high demand encourages workers to go towards this sector but training is not a priority for the employers that are in need of instant operational resources, provided by interim agencies on a flexible basis and capable to absorb seasonal peaks. AFTRAL, the sector's training institute, and many other public and privates institutes provide logistics qualifications (CAP, BEP and baccalaureate) but they are not strictly necessary, for the access in the industry (except for the CACES certificate). Nevertheless sector based offer for initial and continuing vocational training is large and can be benefited in the framework of companies' training plans or personal initiative with the use of CPF credits.

Two additional considerations appear from preliminary interviews carried out in the two considered sectors. First, more than the adaptation of the workforce, the adaptation of the companies themselves could be affected by technological developments. In metallurgy additive methods with 3D printing for example, could recompose the industrial landscape in terms of business and sizing of the companies, with evident impact on the territorial industrial districts. For logistics the transformation of warehouses can be very radical, highly automatized logistical venues works with very narrow merchandise racks and in the middle an on-rail-robot that pick up the goods automatically according to the order of the system. The projects of installation of these kind of machines it is not for everybody and it lead to some paradox statements: "it is not the machine at the service of the company but it is the company at the service of the machine!". Providers of this type of machines choose their customers on the basis of companies' fitting organization processes and ways of working elaborate enough to justify the installation: "The machine does not support any error, no millimeter that exceeds, cartons, packages must be adapted". Full automatization is not beneficial for all and companies should carefully evaluate if technological breakthroughs are really beneficial for their business.

Second, is quite clear that we are not really mourning the fade of low-qualified work, it is just changing like also society is changing. There is a natural adaptation of society to technology, and where we thought we had to train people, in reality, they are training themselves and we just have to adapt their job to meet them. In the next future these workers will have to deal less with repetitive and standardised tasks and more with creative and tasks developing "problem-solving" skills exactly as happens in the day-by-day life using digital supports like smartphones or tablets.

These preliminary considerations about impact of digitalization on work will be further investigated in the next phase of the REPLAY-VET project establishing a joint discussion with national and sector policymakers, industry representatives and other stakeholders.

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