

# Labor Force Demand And Supply Profile of Jabal Ajloun Development Area

Presented by
Dajani Consulting Co.
SABEQ
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#### **Outline**

- Study objectives
- Study methodology
- Challenges Faced
- Indicators of labor supply
- · Population and labor force characteristics
- · Labor supply component of Jabal Ajloun
- Labor supply component of Ajloun governorate
- Labor demand component
- · Quarries and mining in Ajloun
- Gap Analysis
- Recommendations



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#### **Acronyms**

- JADA: Jabal Ajloun Development Company.
- ADA: Ajloun Development Area.
- DOS: Department of Statistics.
- NCHRD: National Center for Human Resources Development.
- MoL: Ministry of Labor
- MoHE: Ministry of Higher Education
- LFP: Labor Force Profile.
- DZC: Development Zones Commission.
- RSCN: Royal Society for Conservation of Nature.



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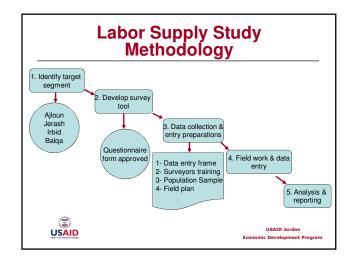
# Analyze labor demand of the private sector in the development area in terms of quality and quantity of needed employees, to develop a labor demand profile. Analyze labor supply focusing on the characteristics of the labor force in the area, in terms of skills, training, location, willingness to work... etc. to develop a labor supply profile. Compare the labor force demand and supply to identify the level of match between available workforce and available jobs and make relevant decisions accordingly. USAID Jordan Economic Development Program

#### Labor Demand Study Methodology

- Interviews and discussions with the Board of Directors of Jabal Ajloun Development Company (JADA).
- Initial plans and studies for development including potential projects as provided by Ajloun Development Area (ADA) and JADA.



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#### **Challenges**

- Scope:
  - Large geographic area under Jabal Ajloun
  - Wide range of businesses under Tourism sector
- Public Perception:
  - Manage the expectations of interviewed people in terms of quick results in investment and employment.
- · Lack of known anchor tenants:
  - Unknown investment details may affect the relevance and accuracy of data on labor demand



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# Population and Labor Force Characteristics



#### **Data Sources of Labor Supply Study**

- The labor supply data consists of the following:
  - 1. Desktop research data
  - 2. Data gathered through field survey
- The labor supply data covered geographic area from four governorates:
  - Ajloun
  - Jarash
  - Irbid



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#### **Definitions**

- Economically active: any household person aged 15 years and above with an economic activity during the seven days prior to the date of interview. This status may be one of the following cases:
- Employed: paid employee, own business employee, unpaid family-owned business worker, other worker
- Unemployed: unemployed ever worked, unemployed never worked.
- Economically inactive: student, housemaker, with means (income), disabled, others.
- Employment rate: proportion of employed from the population at age of work
- Unemployment rate: Number of unemployed divided by total number of workforce.
- Workforce: total employed and unemployed persons in the age of work and looking for jobs.



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## Population by Governorate for the Years 2006 – 2008<sup>1</sup>

Governorate	Male	Female	Total
Balqa	194,800	180,400	375,200
Jarash	86,400	81,600	168,000
Ajloun	63,200	65,600	128,800
Irbid	510,500	486,300	996,800
Population by Gender for the ye	ear 2007		•
Balqa	199,100	184,300	383,400
Jarash	88,300	83,400	171,700
Ajloun	67,000	64,600	131,600
Irbid	521,700	487,000	1,018,700
Population by Gender for the ye	ear 2008		-
Balqa	203,500	188,400	391,900
Jarash	90,300	85,200	175,500
Ajloun	68,500	66,000	134,500
Irbid	533,200	508,100	1,041,300

# Population by Age Group for the Years 2006-2008<sup>1</sup>

		Percentag	e in 2008		Percentage in 2007			Percentage in 2006				
Age (year)	Balqa	Jarash	Ajloun	Irbid	Balqa	Jarash	Ajloun	Irbid	Balqa	Jarash	Ajloun	Irbid
0-4	12.5	13.1	12.5	11.5	11.9	13	12.1	12.2	12	12.6	12.6	11.8
59	12.5	13.1	12.4	12.4	11.9	12.7	12.3	12.1	12.7	12.5	12.6	11.7
1014	13.1	13.8	13.1	13.8	13	14.6	13.2	13.1	13.3	13.5	14.4	12.7
1519	11.5	12	11.7	12.7	11.9	12.2	12.5	11.8	11.8	12.9	13.1	12.2
2024	9.4	10.4	10	10.1	9.8	10.5	10.2	10.2	10.2	11.4	10.1	10.6
2529	7.5	7.9	8	7.5	8.3	8	8	7.9	7.8	8.1	8	8
3034	6.6	6.9	7.1	6.3	6.6	6.7	7.2	7	6.2	6.6	6.4	6.6
3539	6.2	6.2	5.9	5.9	6.7	6.1	5.7	6.3	5.8	5.4	5.8	6.2
4044	5.5	4.7	4.9	5	5.3	4.5	4.6	4.9	5.5	4.5	4	5.1
4549	4.4	3	3.8	3.5	4	2.8	3.7	3.7	3.7	3.2	3.2	3.9
5054	2.8	2.4	2.7	2.7	2.7	2.3	2.7	2.9	2.6	2.5	2.4	3
5559	2	1.8	2	2.1	2.3	1.7	2	2.2	2.4	2	2	2.1
6064	2	1.7	1.8	2.2	1.8	1.6	1.4	2	2	1.5	1.9	2.2
65+	4	3	4.2	4.3	3.8	3.4	4.4	3.8	3.8	3.3	3.5	4

USAID 1. Population statistics, DOS.

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#### **Number of Labor Force**

Governorate	2006	2007	2008
Balqa	82,579	88,097	86,305
Irbid	199,360	231,638	244,946
Jarash	31,749	35,495	36,564
Ajloun	30,823	29,959	30,369
Source: NCHRD			

The total Jordanian labor force was 1,342,815 in 2008, which means that the labor force in the four governorates represented 29.7% of the total Jordanian labor force in 2008.



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#### **Economic Participation rate**

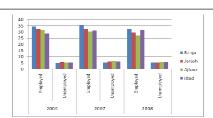
Economic participation rate (%) is labor force divided by population at the age of work (15 years and above). Participation rate in Jordan was 14.2% for females, 64% for males and 39.5% for total in 2008 (DOS).

Governorate	2006	2007	2008			
Balqa	37.5	40.8	39.3			
Irbid	34.2	37.5	37.3			
Jarash	34.9	38.6	38.5			
Ajloun	33.4	37.1	37			
Source: Source: DO	Source: Source: DOS - Employment and Unemployment Survey					



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## Population and Employment Indicators



Employed persons increased from an average of 31.7% employed in 2006 to 32.4% and decreased to 30.17% in 2008, while unemployed from the economically active persons increased from an average of 5.4% in 2006 to 6.12% in 2007, and decreased to an average of 5.7% in 2008.



USAID 1. Annual statistics books, DOS

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#### **Employment rate**

Employment rate (%) is the number of employed divided by population at the age of work (15 years and above). Employment rate in Jordan was 10.8% for females, 57.5% for males and 34.5% for total in 2008. (DOS)

Governorate	2006	2007	2008
Balqa	32.3	35.4	34.3
Irbid	28.8	31.3	31.5
Jarash	29.4	32.4	32.5
Ajloun	27.4	30.5	31.5

Source: Source: DOS - Employment and Unemployment Survey



#### **Number of Employed Workforce**

Governorate	2006	2007	2008
Balqa	70,940	76,513	75,289
Irbid	168,181	193,436	206,103
Jarash	26,830	29,745	30,875
Ajloun	25,231	24,645	25,850
Source: NCHRD			

The total Jordanian employed workforce was 1,172,701 in 2008, which means that the employed workforce in the four governorates represented 28.9% of the total employed workforce in 2008.



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#### **Unemployment rate**

Unemployment rate (%) is the number of unemployed divided by population at the age of work (15 years and above). unemployment rate in Jordan was 24.4% for females, 10.1% for males and 12.7% for total in 2008. (DOS)

Governorate	2006	2007	2008						
Balqa	14.1	13.2	12.8						
Irbid	15.6	16.5	<u>15.9</u>						
Jarash	15.5	16.2	15.6						
Ajloun	18.1	17.7	14.8						
0			0 0 P00						



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#### **Number of Unemployed Workforce**

Governorate	2006	2007	2008
Balqa	11,639	11,584	11,016
Irbid	31,179	38,202	38,843
Jarash	4,919	5,750	5,689
Ajloun	5,592	5,314	4,519
Source: NCHRD			1

The total Jordanian unemployed workforce was 170,114 in 2008, which means that the unemployed workforce in the four governorates represented 35.3% of the total unemployed workforce in 2008.



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#### **Number of Job Seekers**

Governorate	2006	2007	2008			
Balqa	646	938	1,036			
Irbid	1,968	4,059	5,395			
Jarash	271	670	852			
Ajloun	250	212	295			
Source: MoL - Directora	Source: MoL - Directorate of Employment					

The total job seekers registered at the labor and employment directorates was 24,029 in 2008, which means that the job seekers in the four governorates represented 31.6% of the total job seekers in 2008.



#### **Training and Educational Outputs**

 Total universities graduates in the four governorates 2007-2008:

Bachelor degree 6,773 males and 7,861 females

· Total community college graduates 2008:

About 1500 males and females

Total VTC graduates 2008:

433 males and 392 females

Specializations of graduates were addressed in the labor supply survey.



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#### **Higher Education Outputs**

Total Bachelor degree graduates from universities by year and gender											
Year		2005-2006		2006-2007			2006-2007 2007-20			2007-2008	
University	Total	М		Total	М		Total	М			
Al Yarmouk University	3598	1392	2206	3594	1268	2326	4003	1377	2626		
Jordan University for Science and Technology	3161	1603	1558	2871	1367	1504	2951	1461	1490		
Philadelphia	1615	1320	295	1661	1263	398	1659	1324	335		
Irbid National University	889	519	370	758	407	351	746	400	346		
Jerash Private University	1066	600	466	1239	711	528	1317	734	583		
Balqa Applied University	3004	1402	1602	4283	1674	2609	3958	1477	2481		
Total graduates	13,333	6,836	6,497	14,406	6,690	7,716	14,634	6,773	7,861		

In 2007-2008, the higher diploma graduates were 445, while the masters degree graduates were 1238 and the PhD degree graduates were 128 in the above universities.



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#### **Labor Supply Component**



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#### Field Survey: Sample size

The size of the planned sample was 956 members from the four governorates. The distribution of the actual sample was as follows:

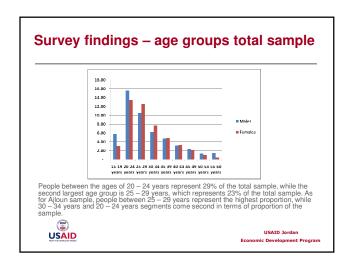
Ajloun: 171Jerash: 224Irbid: 454Balga: 107

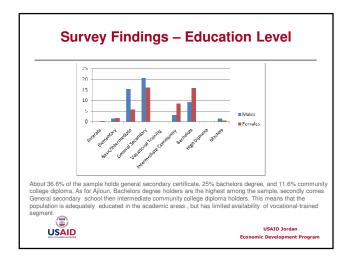
The sample was distributed proportionally on the district level and by gender as follows:

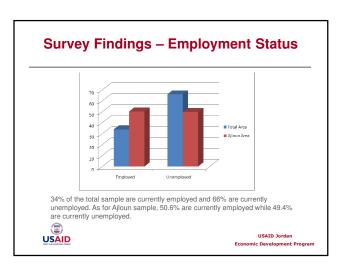


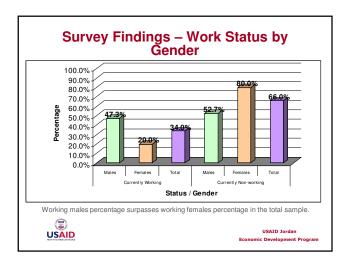
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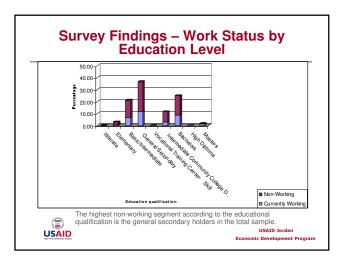
Governorate	District	Population	Sample	Males	Females
Ajloun	Qasabah	63,430	80	41	39
,	Sakhra	23,360	29	15	14
	Arajan	17,000	21	10	11
	Kufranjeh	30,710	39	20	19
otal Ajloun		134,500	169	86	83
Jerash	Qasabah	151,190	190	98	92
•	Mastasbeh	13,450	17	9	8
		10,860	14	7	7
otal Jerash		175,500	221	114	107
Irbid Kora		102,130	128	66	62
		95,580	120	61	59
•	Bani Obaid	104,950	132	68	64
		49,540	62	32	30
otal Irbid		352,200	442	227	215
Balqa	A'arda	11,070	14	7	7
•	Alla'n & Zay	15,840	20	11	9
	Deer Alla	52,590	66	34	32
otal Balqa		79,500	100	52	48
otal area under the	scope	429,352	932	479 USAID J	453 ordan

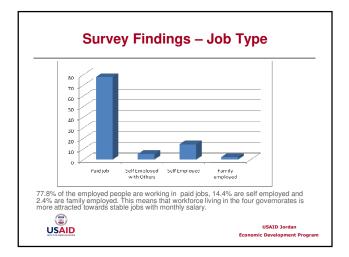


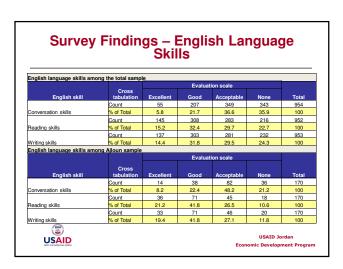












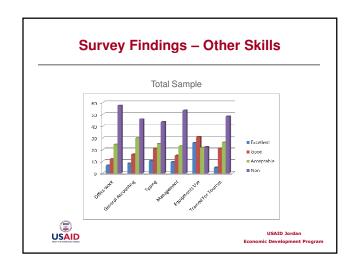
## Survey Findings – English Language Skills

- Based on the sample self assessment, English conversation skills in the governorates is considerably weak, as 36% of the sample members lack English conversation skills and 36.6% are acceptable and only 5.8% of the sample are excellent. English reading and writing skills are better than conversation as results show.
- On the other hand, and based on self assessment, Ajloun sample alone has better English conversation skills than other governorates, where 48.2% are acceptable, 22.4% are good and 8.2 are excellent and only 21.2% lack English conversation skills. The same can be concluded for reading and writing



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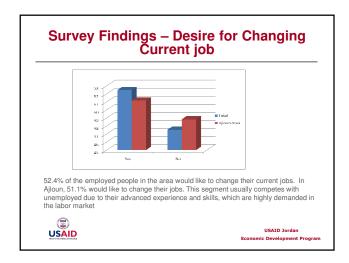
#### **Survey Findings- Employed Workforce**

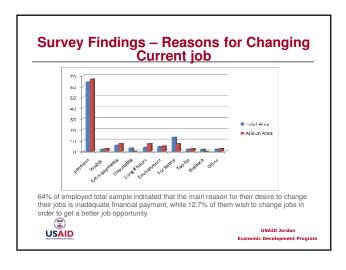
	Mal	es	Femal	es
Job Category	Number of employees	%	Number of employees	%
The Armed Forces	26	11.1%	1	1.1%
Management and commerce	29	12.4%	12	13.2%
School education (teaching)	33	14.1%	38	41.8%
Vocational occupations	37	15.8%	22	24.2%
Engineering	3	1.3%	1	1.1%
Medical services	6	2.6%	5	5.5%
Worker	21	9.0%	2	2.2%
University faculty/teacher	2	0.9%	0	0.0%
Services (Security, Messenger)	10	4.3%	2	2.2%
Information technology	2	0.9%	0	0.0%
Lawyer	3	1.3%	0	0.0%
Tourism services staff	3	1.3%	0	0.0%
Driver	18	7.7%	0	0.0%
Retail sales staff	35	15.0%	7	7.7%
Other	6	2.6%	1	1.1%
Total	234	100	91	100

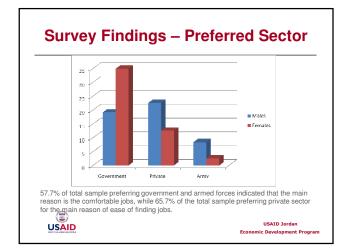
#### **Survey Findings- Employed workforce**

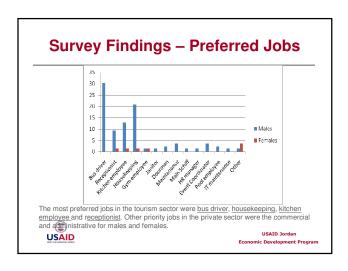
This distribution indicates the availability of experienced workforce in education and vocational sectors, while there is a lack of professional staff in the tourism services sectors.

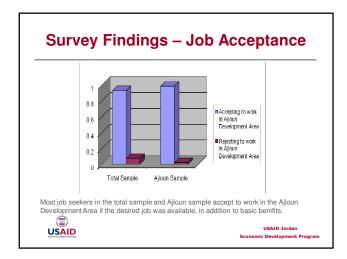


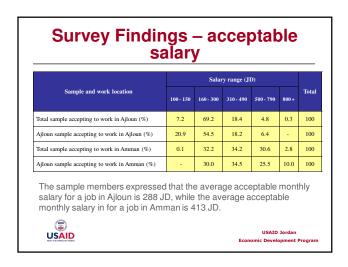


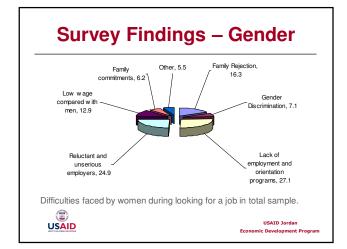


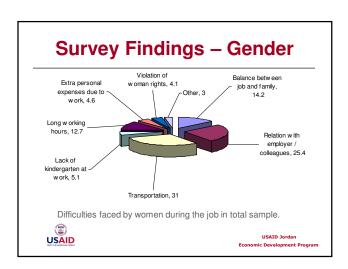


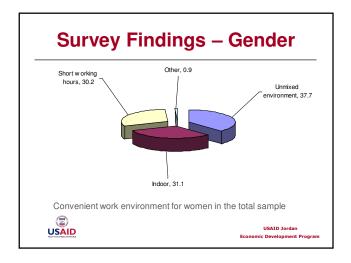


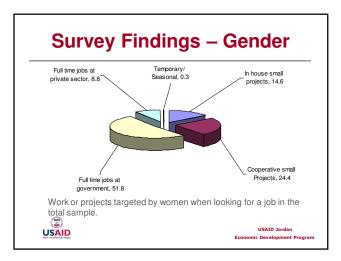




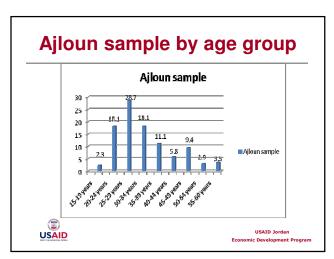


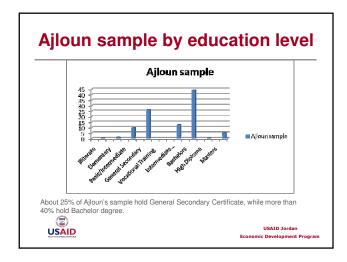


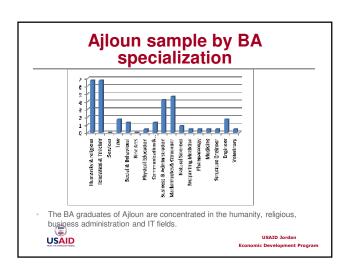


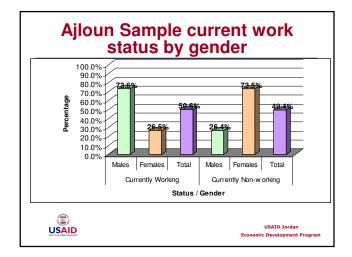


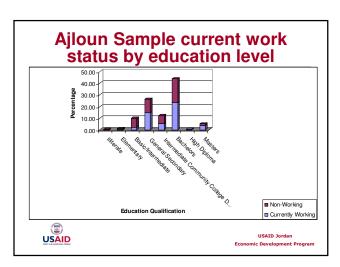


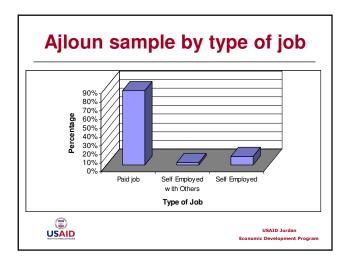


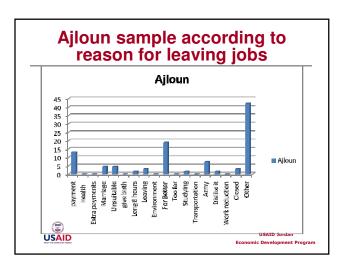


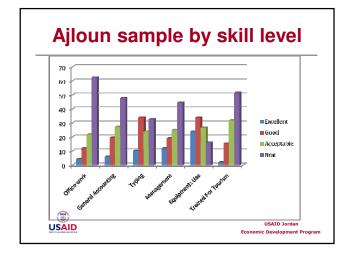


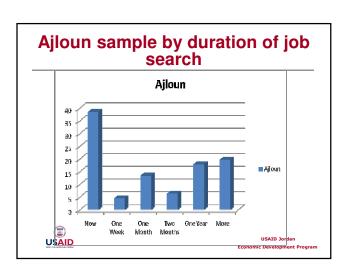


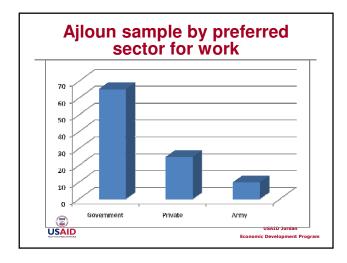


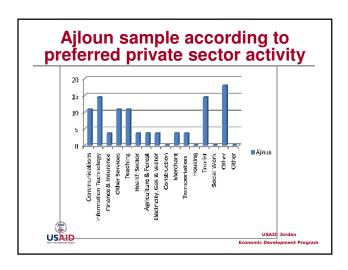


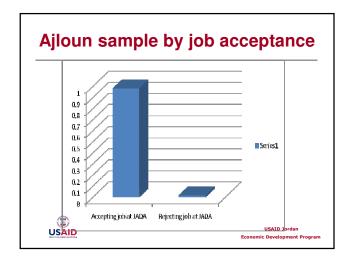


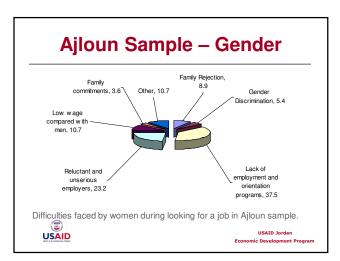


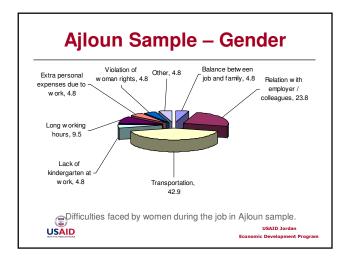


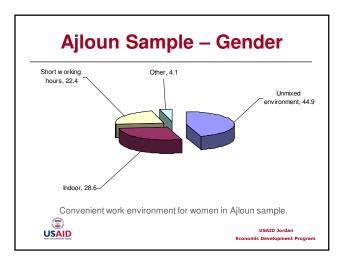


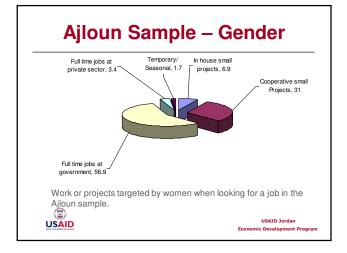












#### **Conclusion of Labor Supply**

- High number of unemployed workforce exist around Ajloun Development Area.
- Education level varies among the workforce covering all degrees and educational qualifications.
- Limited workforce is specialized in tourism and hospitality.
- Most of the workforce accepts job opportunities in ADA provided that the offered salary and benefits are satisfactory.



#### **Labor Demand Component**



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#### **Labor Demand**

- Meetings were held with the JADA board of directors to understand their vision of the area, and consequently estimate labor quality and quantity needed.
- Estimations were made based on initial plans and project ideas.
- Labor demand was divided into fast track projects and the Long term projects.



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#### **Potential Labor Demand**

- The main theme of the ADA is <u>natural and environmental tourism</u>.
- This means probable hospitality investments, such as: hotels, spas, resorts tourist villages, lodges, countryside residential area and other activities. <u>The</u> <u>total number of projects is not yet determined.</u>
- Tourism projects will be supported by commercial and trade services
  offered for tourists, and operated by small and medium size enterprises
  such as organic farming, herbs production, traditional handicrafts and so on.
  The total number of projects is not yet determined.
- Each project in the tourism sector is estimated to employ 300 to 500 employees depending on the services provided. Jobs include front office, room service, health and fitness, accounting and so on.
- Previous studies conducted for ADA estimate that the area will generate thousands of jobs in the tourism sector within the coming 20 years.



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#### **JADA Projects**

- JADA (2,168 dunums) will include the fast track:
- Hotels
- 3 hotels  $\star$   $\star$   $\star$ , 2 hotels  $\star$   $\star$   $\star$ , 1 hotels  $\star$   $\star$   $\star$   $\star$  in addition to three eco-lodges
- Serviced residential area (Villas, town houses, apartments)
- 3. Un-serviced residential area.
- 4. Mixed use (Retail shops, cafes, restaurants, conferencing facilities)
- 5. Entertainment (Theater, cultural center and museum)
- 6. Un-built land: picnic area and open space

Refer to annex 1: JADA Development Conceptual Master Plan



#### **Labor demand Profile of hotels** in JADA projects

The estimations were based on the labor demand commonly expected in the hotel industry according to the classification of hotel as determined in a similar model (Dead Sea development area) using a standard average.

	3		4		5	
Department	stars	%	stars	%	stars	%
Management	3	1.88	1	0.33	23.5	4.70
Front office	30	18.75	23	7.67	54	10.81
Food and Beverage	48	30.00	102	34.00	211	42.24
Marketing and Sales	7	4.38	5	1.67	0	0.00
Financial	8	5.00	20	6.67	24	4.80
Human resources	5	3.13	14	4.67	30	6.01
Security	- 8	5.00	18	6.00	25	5.01
Maintenance Dept.	11	6.88	30	10.00	37.5	7.51
House keeping	28	17.50	80	26.67	75	15.02
Other (Recreation, Purchasing, Banqueting, Spa)	12	7.50	7	2.33	47	9.41
Total	160	100%	300	100%	527	100%

Refer to Annex 2 for labor demand by position and detailed labor demand description of hotels in JADA. **USAID** Jordan

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#### **Labor demand Profile of hotels** In JADA projects Labor demand of hotels in JADA Component No. of No. of No. of No. of kystrooms Total labor 1 Hotels 1.1 5 star hotel and spa 1.1a Grand Villas 1.1b Attached Villas (2 keys/unit) Total 5 star hotel Standard hotel average 20 20 **40** 542 160 160 1.2 4 star hotel 1.2a Attached Villas (2 keys/unit) 1.2b Town Houses (4 keys/unit) 1.2c Assistance (6 keys/unit) 4 277 300 43 61 5 350 527 1.2c Apartments (6 keys/unit) Total 4 star hotel 10 44 65 **494** 1.3 3 star hotel - 1 1.3a Attached Villas (2 keys/unit)

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36

Total hotels
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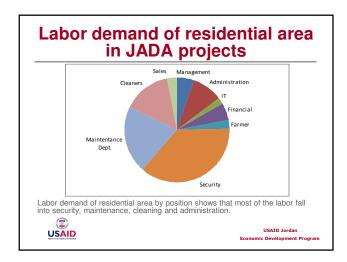
#### Labor demand of Eco-lodges in **JADA** projects

Expected total labor demand of JADA Eco-lodges*				
Classification	No. of units	No. of keys	Total labor demand	
Eco-lodge 1	45	45	20	
Eco-lodge 2	45	45	20	
Eco-lodge 3	75	75	33	
Total	3	165	73	

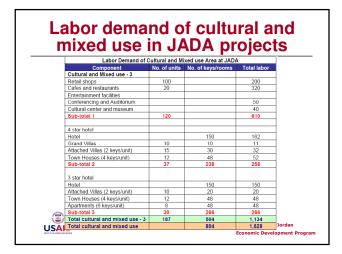
\* Projected labor demand was based on information from JADA

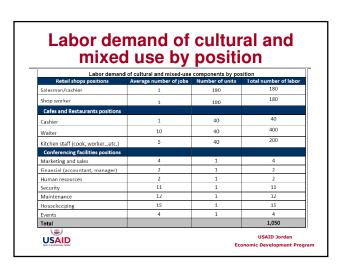


# Labor demand of residential area in JADA projects The labor demand estimations were based on the labor demand commonly expected in the residential areas with property management operator such as an existing model (Tala Bay in Aqaba) considering the number of units. Apartments (6 keys/unit) Total residential - 2 Residential - 3 Grand Villas Villas Attached Villas (2 keys/unit) Town Houses (4 keys/unit) Apartments (6 keys/unit) USAID **Economic Development Program**









# Labor demand of cultural center and museum by position

Cultural center and museum	Average number of jobs	Number of units	Total number of labor
Theater: General manager, executive secretary, technical director, audiovisual engineer, decoration technicians, maintenance, cleaning workers and security.	20	1	20
Museum: General manager, executive secretary, event manager, receptionists, audiovisual engineer, museum curator, museum technician, maintenance, cleaning workers and security.	20	1	20
Total	-	-	40

Labor demand estimations for the cultural center and museum component were based on the existing labor profile of the Royal Cultural Center and Theater.



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# Labor demand of un-built land in JADA projects

 The un-built land will serve as interactive green picnic area and open space for camping activities. The expected labor demand consists of guards, forest rangers and gate admission officers. This part of JADA is estimated to generate 50 jobs.



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#### **Projected Labor Demand of JADA**

Project	Labor Demand
Hotels and lodges areas	1,625
Residential areas	89
Cultural and mixed use areas	1,628
Interactive green and open space areas	50
Total	3,392

In total, JADA projects are supposed to generate about 3,392 direct jobs when the projects are fully operational. The indirect jobs are estimated to be 6,730 new jobs (refer to annex 5 for indirect labor calculations)



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#### **ADA Projects**

- The list of potential projects were provided by PMU based on the initial study of ADA done by PA Consulting Group and Business Insights Consulting. These projects represent the long term plan for the area.
- Each project consists of several components covering a certain area of land. Detailed projects components and labor demand are included in annex 3.
- Only the contact persons of RSCN project and Um Al Yanabee project were reachable in order to collect labor demand information. <u>The labor demand of these projects according to position is included in annex 4.</u>
- Most of the projects include hotels and lodges for accommodation, or real estate development for residential uses. The labor demand of such components were based on similar existing projects in other development areas (Dead Sea, Aqaba).

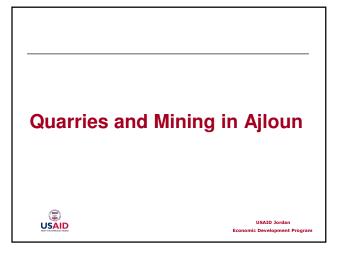


#### **Labor Demand of ADA**

Project	Labor Demand
RSCN Ajloun natural reserve	149
5 Star lodge and guide facility at RSCN reserve	45
Um Al Yanabee Village re-development	39
Village resort - Quarry site	316
Resort hotel on the Castle view	163
Gateway village and new community at the Irbid gate	238
Deir As-Smadiyyeh Ash-Shamali and Al Janoubi	95
Pella Antiquities site	188
Total	1,233

The estimated total direct labor demand of ADA is  $\frac{1,233}{2}$  direct jobs, while the indirect jobs are estimated to be  $\frac{2,446}{2}$  new jobs (refer to annex 5 for indirect labor calculations). The detailed qualifications, skills and description of positions of the labor demand are unavailable at this stage.

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#### **Quarries and Mining**

- Most of quarries are leased to operators by owners.
- Right of use is given to operators to improve landscape and income.
- Profits of this industry are considered substantial for quarries with sizes of 5 dunums and more.
- Production is usually marketed through stone traders in Irbid and Amman
- Most of the active quarries are located in remote areas in Ajloun, a way from populated areas (Rajeb, Ballas, Safieneh, Dahous).
- Size of labor 4 to 14 workers, mainly Jordanians.
- Average income exceeds 800 JD/month for owner.
- Owners usually receive <u>25%</u> of the profits when they lease the land to quarry operators.



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# **Gap Analysis** USAID **Economic Development Program**

#### **Summary of Gap Analysis**

Aspect	Demand	Supply	Gap
Education level	Secondary, Vocational and University	Secondary, Vocational and University	No gap
Specializations	Hospitality, tourism, antiquities, environmental sciences, languages, business management, marketing.	Business management, accounting, education, sciences, languages, marketing, medical, engineering	Gap in the tourism and hospitality fields
Skills	Skilled to professional <sup>(1)</sup>	Unskilled to skilled	Gap in the skilled and professional levels

(1) SKILLED LABOR: PASSED THE VOCATIONAL TRAINING TEST FOR SKILLED LEVEL, PROFESSIONAL LABOR: SKILLED LABOR WITH MORE THAN 5 YEARS OF EXPERIENCE IN THE SAME OF THE SAME

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#### **Summary of Gap Analysis**

- The projected labor demand shall be fulfilled gradually by the labor supply available in the market over the coming 20 years of development.
- The gap can filled by providing quality labor at the right time, therefore, preparing the workforce for the kind of jobs needed by the planned projects.



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#### Recommendations

- Keep track of potential and expected investments' estimated labor demand through creating a labor market monitoring function or unit.
- Prepare the transportation infrastructure (roads, transport stations) to support mobility networks inside and around the development area, in order to provide reliable and affordable access of labor to the development area as noticed by the consultants.
- Introduce educational and training programs to cater for the skills and competencies required by the tourism investments expected in the area, through training and education institutes in Jabal Ajloun region, with special focus on youth segment. It is advised to explore opportunities for cooperation with existing colleges and institutes in the country.
- A detailed study of the available tourism training programs and providers is required, to decide on the feasibility of establishing tourism institutes in Ajloun or the neighboring governorates.



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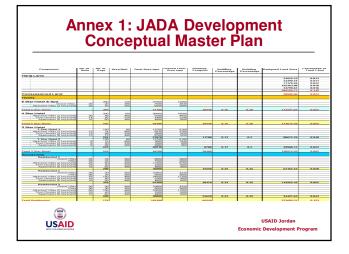
#### Recommendations

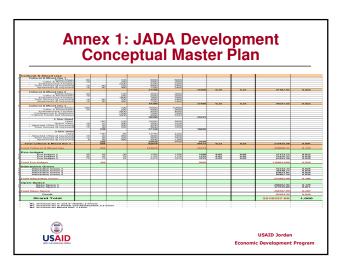
- Implement awareness activities targeting women and families to facilitate understanding of the importance of female contribution to the labor market, and the advantages of working in the tourism and hospitality sector.
- Launching a fast track development at JADA with at least one project employing people from the local community, in order to build credibility and trust among the population, and provide tangible results.
- Involve community leaders in marketing for the investments among the population, and advising workforce to join new activities and sectors

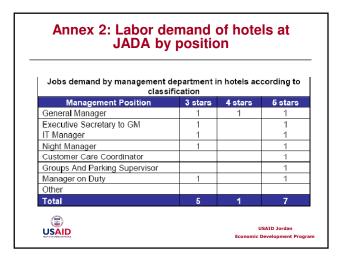


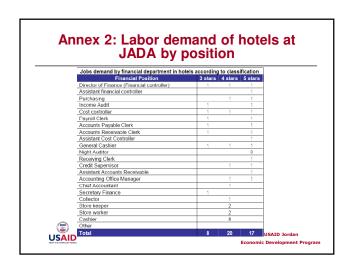


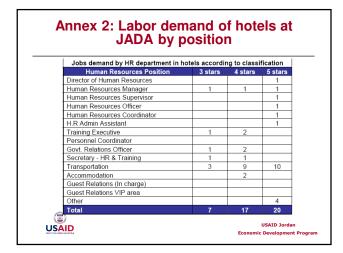


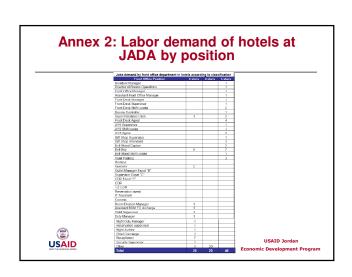


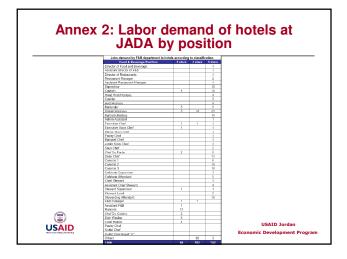


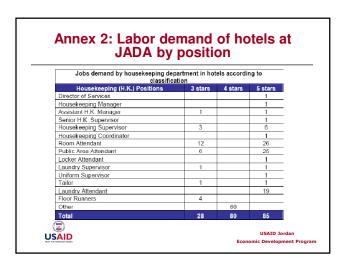


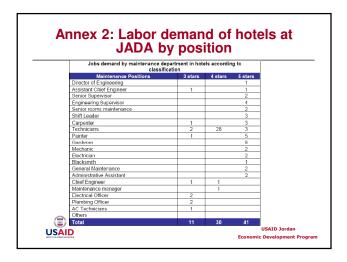


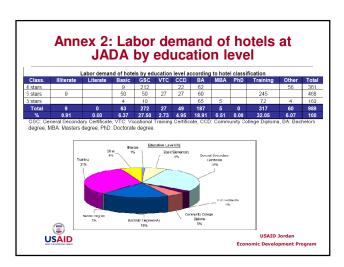


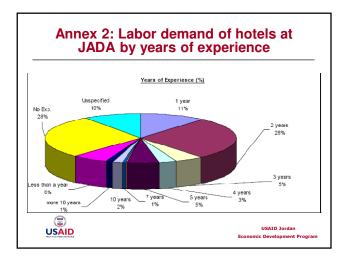


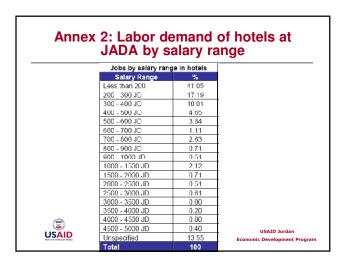


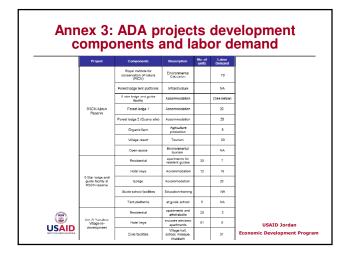


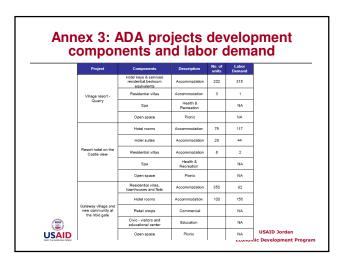


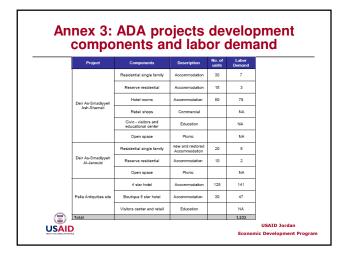


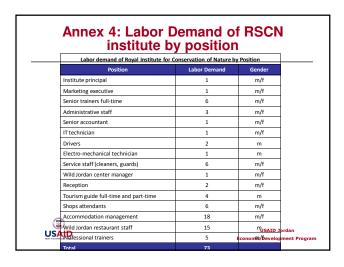


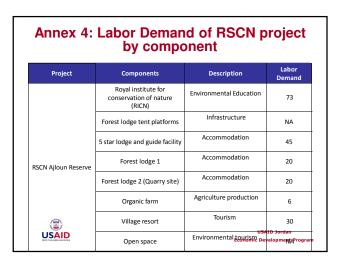


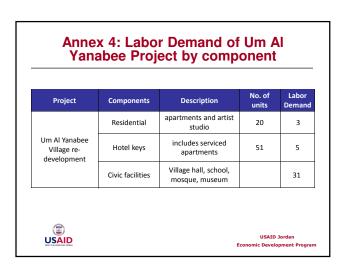












#### **Annex 5: Calculations of indirect labor**

- The indirect labor or jobs are calculated using the multiplier of the relevant sector as referenced in the "Economic Development Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II). Third Edition 1997, Washington, DC".
- The main sector of ADA is tourism, therefore; it is classified under code 32 which is lodging, amusement and recreation services with a multiplier of 1.9841.
- Each direct job in the tourism sector generates 1.9842 indirect jobs.
   Accordingly:
- JADA indirect labor = 3,392 x 1.9842 = 6,730 indirect jobs.
- ADA indirect labor = 1,233 x 1.9842 = 2,446 indirect jobs



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