Japan International Cooperation Agency (JICA)

Local Government of Mangistau Oblast
Government of the Republic of Kazakhstan

MASTER PLAN STUDY ON INTEGRATED REGIONAL DEVELOPMENT FOR MANGISTAU OBLAST IN THE REPUBLIC OF KAZAKHSTAN

FINAL REPORT
VOLUME IV
SURVEY REPORT

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Abbreviations

CIS	Commonwealth of Independent States
FGD	Focus group discussion
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
KZT	Kazakh tenge
PVC	Polyvinyl chloride
SEZ	Special economic zone

CHAPTER 1 DISTRIBUTION AND LOGISTICS INDUSTRY SURVEY

This chapter presents the result of Distribution and Logistics Industries Survey (DLIS Survey), which was subcontracted to a local consulting firm and conducted in Almaty, Astana and Aktau for Master Plan Study on Integrated Regional Development for Mangistau Oblast in the Republic of Kazakhstan.

The first three sections describe the objectives, survey outline including methodology, and design and structure of the questionnaire. The final part presents the results of the survey in statistical terms.

1.1 Objective

The objective of the Survey is to (i) collect information from senders/receivers of product/commodity such as manufacturers and logistic service providers, (ii) clarify the present conditions and issues of distribution/logistics activities, and (iii) evaluate the development potentials in Aktau and Mangistau Oblast as a distribution center in the country as a whole and the Caspian Region.

1.2 Survey Outline

(1) Methodology

The interview survey was conducted utilizing two types of questionnaires: one for senders of product such as manufacturers and the other for logistic service providers. The samples were selected based on the result of initial survey by JICA Study Team, the data from Mangistau Oblast and the database of the local consultant.

(2) Location of Survey

The Survey will be conducted in Mangistau Oblast, Almaty and Astana areas.

(3) Size of Sample and Distribution

The total number of samples to be collected was 20 in Mangistau Oblast and 60 in Almaty and Astana, respectively. The breakdown for targeted type of industries is shown below.

<u>Senders/Receivers of Product/Commodity</u>

Manufacturers, wholesalers, retailers, distributors and raw material suppliers

- Almaty and Astana: 36
- Aktau: 10 (Manufacturers were not included since they were covered by Industrial Survey.)

<u>Logistic Service Providers</u>

Railway companies, port and maritime companies, trucking companies, air transport companies, warehouse companies and freight forwarders and other logistic service providers.

- Almaty and Astana: 24
- Aktau: 10

Notes:

(a) Oil and gas industries were not targets in this survey.
(b) Manufactures, wholesalers/retailers and distributors to be interviewed in Almaty and Astana had marketing outlet in Mangistau Oblast.
(c) Logistic service providers to be interviewed in Almaty and Astana had marketing/distribution network or branch offices in Mangistau Oblast.

1.3 Design and Structure of Questionnaire

The design of the questionnaire was initially prepared by the JICA Study Team and was finalized in collaboration with the local consultant. The design was based on the project objectives and the following questions were provided.

(1) Introduction (Firm Profile)
(2) Type of commodity/product produced or handled
(3) Commodity/product flow and structure of market
- Origin and destination of commodity/product
- Handling volume (weight/monetary basis) by commodity/product per month
- Frequency of transportation and mode of transportation
- Cost of transportation
- Cost of storage

(4) Strategy on distribution and supply chain management
(5) Evaluation of the potential of Aktau (including SEZ) and Mangistau Oblast
(6) Plan for expansion of facilities/plants/offices in Aktau and Mangistau Oblast
(7) Issues and difficulties in business

1.4 Results

The result was analyzed by type: (1) senders/receivers of product/commodity and (2) logistics services providers, and by location: (1) Almaty & Astana and (2) Aktau, respectively.

1.4.1 Senders/receivers of product/commodity in Almaty and Astana

(1) Type of business

Of the questionnaire responses received, 18 firms (50%) are manufactures, followed by 13 firms of wholesalers/retailers (36%) as shown in Table 1.1.

Table 1.1 Type of Business

Type of business	Number	%
1. Manufacturer	18	50.0
2. Wholesaler/Retailer	13	36.1
3. Distributor	2	5.6
4. Raw material supplier	2	5.6
5. Others	1	2.8
Total	36	100.0

(2) Relation of companies/organizations to Mangistau Oblast

The products or commodities of 23 firms (64%) were marketed in Mangistau Oblast.10 firms (28%) had a branch office (for sale) or agent in the Oblasts (Table 1.2).

Table 1.2 Relation of Companies/Organizations to Mangistau Oblast

Relation of companies to Mangistau Oblast	Number	%
1. There is a branch office (for sales) or agent in the Oblast.	10	27.8
2. There is a branch office (for production) in the Oblast.	0	0.0
3. The products are marketed in the Oblast.	23	63.9
4. The services are provided in the Oblast.	1	2.8
5. Raw materials or parts are coming from the Oblast	2	5.6
6. Others	0	0.0
Total	36	100.0

(3) Origin of raw materials/commodities

As for manufactures, 8 firms (44%) import raw materials from foreign countries and 5 firms (28%) procure from foreign countries and other Oblast (Table 1.3). On the other hand, 4 firms (31%) procure from foreign countries and other Oblast and 4 firms from other oblasts in wholesalers/retailers.

Table 1.3 Origin of Raw Materials/Commodities

(a) Manufacture	Number	%
1. Imports from foreign countries and other Oblast	5	27.8
2. Imports from foreign countries	8	44.4
3. From other oblasts	3	16.7
4. No answers	2	11.1
Total	18	100.0
(b) Wholesaler/Retailer	Number	%
1. Imports from foreign countries and from other Oblast	4	30.8
2. Imports from foreign countries	3	23.1
3. From other oblasts	4	30.8
4. Within Mangistau Oblast and from other oblasts	1	7.7
5. No answers	1	7.7
Total	13	100.0
(c) Distributor/Raw material supplier	Number	%
1. From other Oblast	1	25.0
2. Imports from foreign countries	3	75.0
Total	4	100.0

(4) Destination (market) of product/commodity

As for manufactures, 12 firms (67%) responded that the market was other oblasts in large part and Mangistau Oblast in small part, followed by the responses by 3 firms (17%) that the major market was Mangistau Oblast (Table 1.4). Of wholesalers/retailers, on the other hand, 6 firms (46%) responded that the market was other oblasts in large part and Mangistau Oblast in small part, followed by the responses by 4 firms (31%) that the major market was other oblasts as well as small market of Mangistau Oblast and export.

Table 1.4 Destination (Market) of Product/Commodity

(a) Manufacture	Number	%
1. Mainly other oblasts and partially Mangistau Oblast	12	66.7
2. Mainly other oblasts and partially Mangistau Oblast and export	2	11.1
3. Mainly Mangistau Oblast	3	16.7
4. Export (50%) and other oblasts (50%)	1	5.6
Total	18	100.0
(b) Wholesaler/Retailer	Number	%
1. Mainly other oblasts and partially Mangistau Oblast	6	46.2
2. Mainly other oblasts and partially Mangistau Oblast and export	4	30.8
3. Mangistau Oblast (50%) and other oblasts (50%)	1	7.7
5. No answers	2	15.4
Total	13	100.0

(c) Distributor/Raw material supplier	Number	%
Mainly other oblasts and partially Mangistau Oblast	4	100.0
Total	4	100.0

(5) Transportation cost, transit time and major transportation mode

Most of firms did not release the information on the transportation cost. The transit time from Almaty or Astana to Aktau was varied between 4 days and 10 days although truck is slightly faster than railways. As for major transportation mode, 17 firms (47%) use truck and also 17 firms use railways. 2 firms (5.6%) use airplane.

(6) Cost structure of transportation of product/commodity

Most of respondents answered that share of direct logistic costs (for freight, cargo handling, warehouse, was between 60-70%, followed by packaging cost (10-20%), capital equipment including IT costs (10-20%) and administration and other costs (10%). Some firms responded that the share of capital equipment amounts to more than 50%.

(7) Policy or strategy for distribution/logistics (including supply chain management)

No respondent answered the detailed strategy for distribution/logistics (including supply chain management, but some firms stressed that importance of control of storage facilities/warehouse and raw materials warehouse, utilization of appropriate logistic service providers and selection of effective transportation mode.

(8) Possession of own transport equipment and storage facilities

Of 36 respondents, 18 firms (50%) own transport equipment such as trucks and railways wagons (Table 1.5). Further, 34 firms (94%) have own storage facilities or warehouses.

Table 1.5 Possession of Own Transport Equipment and Storage Facilities

Possession of transport equipment	Number	%
1. Yes	18	50.0
2. No	18	50.0
Total	36	100.0
Possession of storage or warehouse	Number	%
1. Yes	34	94.4
2. No	2	5.6
Total	36	100.0

(9) Expansion plan

Six firms (17%) have an expansion plan of plant or office in Mangistau Oblast from the viewpoint of distribution and logistics of their product and commodity (Table 1.6).

Table 1.6 Expansion Plan of Plant or Office in Mangistau Oblast

A plan for expansion of plant/office in Aktau or Mangistau Oblast in terms of distribution	Number	%
1. Yes	6	16.7
2. No	30	83.3
Total	36	100.0

(10) Potential of Aktau or Mangistau Oblast

As shown in Table 1.7, of 36 respondents, 12 firms (33%) answered that the potential seemed to be large since a large-scale development such as SEZ is making progress, followed by the answer that the potential seemed to be large since this area had a good access to foreign market via Aktau Port by 9 firms (25%) and the answer that potential was not changed for certain period by 8 firms (33%).

Table 1.7 Potential of Aktau or Mangistau Oblast in Business

Potential of Aktau or Mangistau Oblast	Number	%*
1. Potential seems to be large since this area will be a distribution center of Kazakhstan as a whole.	7	19.4
2. Potential seems to be large since this area has a good access to foreign market via Aktau Port.	9	25.0
3. Potential seems to be large since a large-scale development such as Special Economic Zone is making progress.	12	33.3
4. Potential is not large since other areas/oblasts are more promising.	7	19.4
5. Potential is not changed for certain period.	8	22.2
Total (multiple answers; sample size=36)	43	-

*Ratio of the number of answers to the total sample size (36)

(11) Issues or problems

For business issues or problems, the answer selected most was “difficulties with distribution/transportation itself (including high costs)” by 12 firms (33%), followed by “complex customs procedures” by 11 firms (31%) and by “shortages of trade links with foreign partners” and “search of buyers” by 7 firms (19%) each. High transportation cost and complex customs procedures seem to be significant issues for senders/receivers of product (Table 1.8).

Table 1.8 Issues or Problems in Business

Issues or problems	Number	%*
1. Difficulties with distribution/transportation (including high costs)	12	33.3
2. Lack of information on internal markets	6	16.7
3. Lack of information on external markets	2	5.6
4. Shortages of trade links with foreign partners	7	19.4
5. Complex customs procedures	11	30.6
6. Incompliance of product to international standards	3	8.3
7. Insufficient demand in the internal market of Kazakhstan	4	11.1
8. Insufficient demand in the regional market (Central Asia, CIS, etc.)	1	2.8
9. Search of buyers	7	19.4
Total (multiple answers; sample size=36)	56	-

*Ratio of the number of answers to the total sample size (36)

The examples of product flows by a metal manufacturer and bottling companies are presented in Figure 1.1 and Figure 1.2.

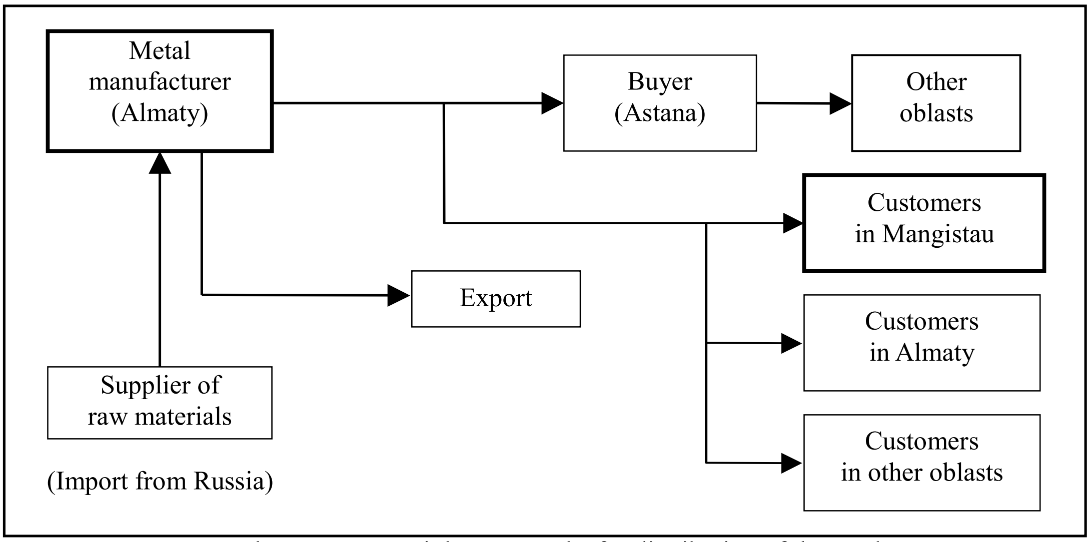
1.4.2 Senders/receivers of product/commodity in Aktau

(1) Type of business

Of the questionnaire responses received, 8 firms (80%) are wholesalers/retailers, followed by 2 firms of raw material suppliers (20%) as shown in Table 1.9.

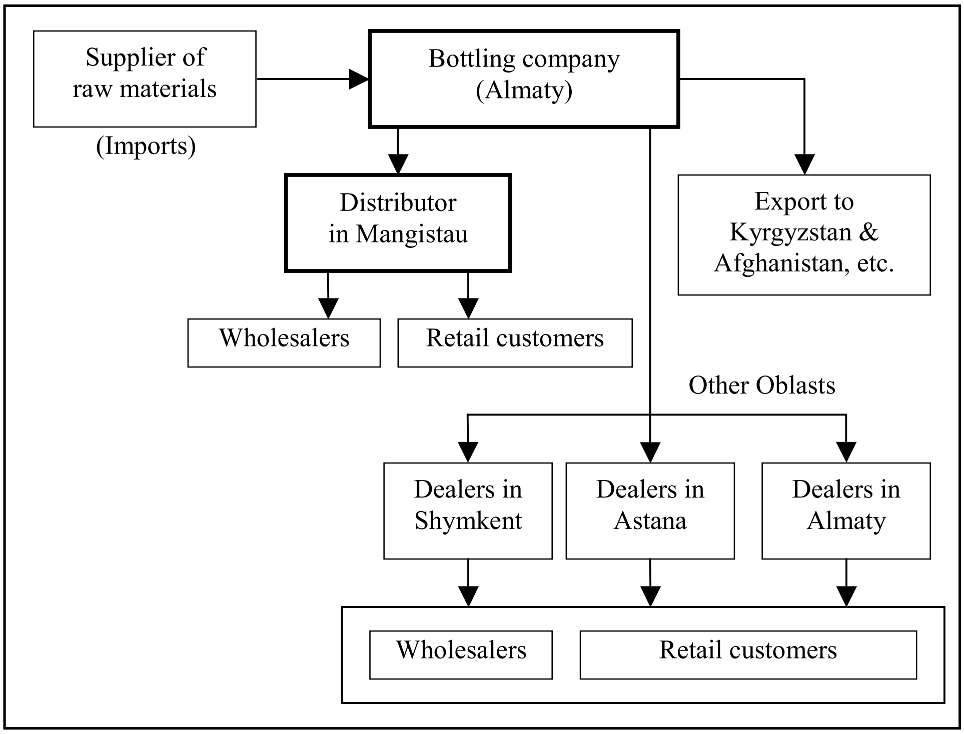
Table 1.9 Types of Business

Type of business	Number	%
1. Wholesaler/Retailer	8	80.0
2. Distributor	0	0.0
3. Raw material supplier	2	20.0
4. Others	0	0.0
Total	10	100.0



Note: The company mainly uses trucks for distribution of the product.

Figure 1.1 Flow of Products by a Metal Manufacturer in Almaty (Example 1)



Note: The company uses railway (80%) and truck (20%) for distribution of the product.

Figure 1.2 Flow of Products by a Bottling Company in Almaty (Example 2)

(2) Type of product handled

Of the questionnaire responses received, 5 firms (50%) handle building and construction materials followed by 2 firms (20%) handling household chemical goods and one firm each handling telecommunication cable, food and petroleum, respectively (Table 1.10).

(3) Position of companies/organizations in Mangistau Oblast

Five firms (50%) were head offices, while another 5 firms were branch offices or agents in the Oblast (Table 1.11).

Table 1.10 Types of Product Handled

Type of product	Number	%
1. Building and construction materials	5	50.0
2. Household chemical goods and remedies of hygiene/medicine	2	20.0
3. Telecommunication cable	1	10.0
4. Food	1	10.0
5. Petroleum	1	10.0
Total	10	100.0

Table 1.11 Position of Companies/Organizations in Mangistau Oblast

Position of companies in Mangistau Oblast	Number	%
1. Head office	5	50.0
2. Branch office or agent	5	50.0
3. Others	0	0.0
Total	10	100.0

(4) Origin of products/commodities

As for wholesaler/retailers, 4 firms (50%) procure products/commodities from other oblasts and 3 firms (38%) obtain from other oblasts and foreign countries (Table 1.12). On the other hand, one of raw material suppliers procures within Mangistau Oblast and the other does from other oblasts, respectively.

Table 1.12 Origin of Raw Materials/Commodities

(a) Wholesaler/Retailer	Number	%
1. Mangistau Oblast	0	0.0
2. Mangistau Oblast and other oblasts	1	12.5
3. Other oblasts	4	50.0
4. Other oblasts and imports from other countries	3	37.5
Total	8	100.0
(b) Raw material supplier	Number	%
1. Mangistau Oblast	1	50.0
2. Other oblasts	1	50.0
Total	2	100.0

(5) Market of products/commodities

As for wholesalers/retailers, 6 firms (75%) responded that the market was Mangistau Oblast in small part, followed by the responses by 1 firm (13%) that the major market was Mangistau Oblast and other oblasts (Table 1.13). Of raw material suppliers, on the other hand, all 2 firms responded that the market is Mangistau Oblast.

Table 1.13 Market of Products/Commodities

(a) Wholesaler/Retailer	Number	%
1. Mangistau Oblast	6	75.0
2. Mangistau Oblast and other oblasts	1	12.5
3. No answers	1	12.5
Total	8	100.0
(b) Raw material supplier	Number	%
Mangistau Oblast	2	100.0
Total	2	100.0

(6) Transportation cost, transit time and major transportation mode

Most of firms did not release the information on the transportation cost. One company responded that the cost was KZT 6,000/m^3 from the eastern part of Kazakhstan. The transit time from the eastern part of Kazakhstan to Aktau was varied between 4 days and two weeks by train. For almost all respondents, the major transportation mode was railways.

(7) Possession of own transport equipment and storage facilities

Of 10 respondents, 7 firms (70%) own transport equipment such as trucks and railways wagons. Further, 8 firms (80%) have own storage facilities or warehouses (Table 1.14).

Table 1.14 Possession of Transport Equipment and Storage Facilities

Possession of transport equipment	Number	%
1. Yes	7	70.0
2. No	3	30.0
Total	10	100.0
Possession of storage or warehouse	Number	%
1. Yes	8	80.0
2. No	2	20.0
Total	10	100.0

(8) Potential of Aktau or Mangistau Oblast

Of 10 respondents, 6 firms (60%) responded that potential seemed to be large since this area become a distribution center of Kazakhstan as a whole, followed by the answer that potential seems to be large since this area has a good access to foreign market via Aktau Port by 4 firms (40%), the answer that potential is not large since other areas/oblasts are more promising by 1 firm and answer that potential is not changed for certain period by 1 firm, respectively (Table 1.15).

Table 1.15 Business Potential in Aktau or Mangistau Oblast

Potential of Aktau or Mangistau Oblast	Number	%*
1. Potential seems to be large since this area will be a distribution center of Kazakhstan as a whole.	6	60.0
2. Potential seems to be large since this area has a good access to foreign market via Aktau Port.	4	40.0
3. Potential seems to be large since a large-scale development such as Special Economic Zone is making progress.	0	0.0
4. Potential is not large since other areas/oblasts are more promising.	1	10.0
5. Potential is not changed for certain period.	1	10.0
Total (multiple answers; sample size=10)	12	-

*Ratio of the number of answers to sample size (10)

(9) Issues or problems

For business issues or problems, “complex customs procedures” was chosen by 7 firms (70%), followed by “difficulties with distribution/transportation itself (including high costs)” by 6 firms (60%), “search of buyers” by 3 firms (30%) and “insufficient demand in the market of Mangistau Oblast” by 2 firms (20%) as shown in Table 1.16.

Table 1.16 Issues or Problems in Business

Issues or problems	Number	%*
1. Difficulties with distribution/transportation (including high costs)	6	60.0
2. Lack of information on markets in Mangistau Oblast	0	0.0
3. Lack of information on external markets	0	0.0
4. Complex customs procedures	7	70.0
5. Insufficient demand in the market of Mangistau Oblast	2	20.0
6. Search of buyers	3	30.0
Total (multiple answers; sample size=10)	18	-

*Ratio of the number of answers to sample size (10)

1.4.3 Logistic service providers in Almaty and Astana

(1) Type of business

Of 24 firms, 10 firms (42%) were freight forwarders, followed by 5 warehouse/storage firms (21%) and 4 railway firms (17%) as shown in Table 1.17.

Table 1.17 Types of Business

Type of business	Number	%
1. Railway company	4	16.7
2. Trucking company	2	8.3
3. Marine transport companies	0	0.0
4. Air transport companies	2	8.3
5. Freight forwarders	10	41.7
6. Warehouse/storage companies	5	20.8
7.Others	1	4.2
Total	24	100.0

(2) Relation of companies/organizations to Mangistau Oblast

Fifteen (15) firms (63%) answered that the services were provided in Mangistau Oblast through network of the company (Table 1.18). On the other hand, 9 firms (37%) answered that there was a branch office (for sales) or agent in the Oblast.

Table 1.18 Relation of Companies/Organizations to Mangistau Oblast

Relation of companies to Mangistau Oblast	Number	%
1.There is a branch office (for sales) or agent in the Oblast	9	37.5
2. The services are provided in the Oblast through network of the company	15	62.5
3. Others	0	0.0
Total	24	100.0

(3) Type of commodity/product handled by companies especially for Mangistau Oblast

Type of commodity/product handled by logistics service providers was fully scattered such as machinery or parts related to oil related industries or to general manufacturers, metal or steel product, food and beverage, article for daily use, building materials and medicaments.

(4) Major customers for freight cargo to Mangistau Oblast

Major customers were manufacturers, followed by wholesalers/retailers and distributors. Customers for logistics service providers in not limited to certain type of business.

(5) Cost structure of transportation

For most of firms, direct transportation cost (including fuel) hold the largest share at 60-70%, followed by road tolls (only for trucking company), customs charges, cargo terminal charges and insurance, which have the share at 10% each approximately.

(6) Cost of transportation, transit time to Aktau or Mangistau Oblast and major mode of transportation

Most firms did not release information on transportation cost. However, the transportation cost for 40 feet container from Almaty to Aktau, which includes cargo terminal fee, customs charge and insurance, is in a range between US$1,500-2,000 by railway and the cost by truck for 20t-cargo is a range between US$4,000-7,000. According to interview to a freight forwarder in Aktau, the cost of 20t cargo by truck is US$1.8/km. The transit time from Almaty or Astana to Aktau was varied between 4 days and 10 days although truck is slightly faster than railways. As for major transportation mode, 12 firms (50%) use truck, 10 firms (42%) use railways and 2 firms (8%) use airplane (Table 1.19).

Table 1.19 Major Mode of Transportation

Major mode of transportation	Number	%
1. Railway	10	41.7
2. Truck	12	50.0
3. Airplane	2	8.3
Total	24	100.0

(7) Recent tendency of handling volume

Out of 24, 8 firms (33%) responded that the handling volume of cargo has increased since 2001 while 13 firms (54%) reported no change and 3 firms (13%) decrease in the volume (Table 1.20).

Table 1.20 Recent Tendency of Handling Volume

Tendency of handling volume since 2001	Number	%
(1) Increased	8	33.3
(2) Decreased	3	12.5
(3) Not changed	13	54.2
Total	24	100.0

(8) Expansion plan

Five firms (21%) had an expansion plan of office in Mangistau Oblast in order to strengthen their business, while 19 firms (79%) responded that there is no expansion plan (Table 1.21).

Table 1.21 Expansion Plan of Office in Mangistau Oblast

A plan for expansion of office in Aktau or Mangistau Oblast	Number	%
1. Yes	5	20.8
2. No	19	79.2
Total	24	100.0

(9) Potential of Aktau or Mangistau Oblast

As shown in Table 1.22, of 24 respondents, 10 firms (42%) answered that the potential is not large since other areas/oblasts are more promising, followed by potential is not changed for certain period by 5 firms (21%). The potential of Aktau or Mangistau Oblast was not highly evaluated at this moment among logistics service providers in Almaty and Astana, although number of samples is small.

Table 1.22 Potential of Aktau or Mangistau Oblast in Business

Potential of Aktau or Mangistau Oblast	Number	%
1. Potential seems to be large since this area will be a distribution center of Kazakhstan as a whole.	4	16.7
2. Potential seems to be large since this area has a good access to foreign market via Aktau Port.	3	12.5
3. Potential seems to be large since a large-scale development such as Special Economic Zone is making progress.	3	12.5
4. Potential is not large since other areas/oblasts are more promising.	10	41.7
5. Potential is not changed for certain period.	5	20.8
Total (multiple answers; sample size=24)	25	-

(10) Issues or problems

For issues or problems, the answer selected the most was "severe competitiveness among other companies in terms of cost" by 11 firms (46%), followed by "infrastructure is not well developed" by 5 firms (21%) and "regulations and laws are not well suited for the current situations of logistic services" by 4 firms (17%), respectively (Table 1.23). Intensified competition was a crucial issue for logistic service providers in Almaty and Astana.

Table 1.23 Issues or Problems in Business

Issues or problems in business	Number	%
1. Infrastructure not well developed	5	20.8
2. Complex customs procedures	3	12.5
3. Severe competition with other companies in terms of cost	11	45.8
4. Insufficient demand of freight cargo in the internal market of Kazakhstan	3	12.5
5. Insufficient demand of freight cargo in the regional market (Central Asia, CIS, etc.)	2	8.3
6. Regulations and laws not well suited for the current situations of logistic services	4	16.7
7. Others	0	0.0
Total (multiple answers; sample size=24)	28	-

1.4.4 Logistic service providers in Aktau

(1) Type of business

Of 10 respondents, 5 firms (50%) were trucking companies, followed by 4 freight forwarders (40%) and 1 air transport company (10%) as shown in Table 1.24.

Table 1.24 Types of Business

Type of business	Number	%
1. Railway company	0	0.0
2. Trucking company	5	50.0
3. Marine transport companies	0	0.0
4. Air transport companies	1	10.0
5. Freight forwarders	4	40.0
6. Warehouse/storage companies	0	0.0
7.Others	0	0.0
Total	10	100.0

(2) Position of companies/organizations in Mangistau Oblast

Six firms (60%) were branch offices or agents, while the rest (4 firms) were head offices (Table 1.25).

Table 1.25 Position of Companies/Organizations in Mangistau Oblast

Position of companies in Mangistau Oblast	Number	%
1. Head office	4	40.0
2. Branch office or agent	6	60.0
3. Others	0	0.0
Total	10	100.0

(3) Type of commodity/product handled by companies in Mangistau Oblast

Type of commodity/product handled by logistics service providers was scattered such as machinery or parts related to oil related industries or to general manufacturers, metal or steel product, food and beverage, article for daily use and document.

(4) Major customers for freight cargo in Mangistau Oblast

Major customers were wholesalers/retailers, followed by manufacturers, distributors, raw material providers and oil companies.

(5) Cost structure of transportation

For most of firms, direct transportation cost (including fuel) held the largest share at 60-90%, followed by road tolls, customs charges, cargo terminal charges and insurance, which had the share at 10-20% each approximately.

(6) Cost of transportation, transit time to Aktau or Mangistau Oblast and major mode of transportation

Most firms did not release information on transportation cost. The transit time from the eastern part of Kazakhstan to Aktau was varied between 4 days and 30 days. As for the main mode of transportation, 6 firms (60%) use truck, 2 firms (20% each) use airplane and railways, respectively (Table 1.26).

Table 1.26 Main Mode of Transportation

Main mode of transportation	Number	%
1. Railway	2	20.0
2. Truck	6	60.0
3. Airplane	2	20.0
Total	10	100.0

(7) Recent tendency of handling volume

Out of 10, 7 firms (70%) reported increase, 2 firms (20%) no change and 1 firm (10%) decrease in the handling volume of cargo for 2001-2007 (Table 1.27).

Table 1.27 Recent Tendency in Handling Volume

Handling volume since 2001	Number	%
(1) Increased	7	70.0
(2) Decreased	1	10.0
(3) Not changed	2	20.0
Total	10	100.0

(8) Potential of Aktau or Mangistau Oblast

Of 10 respondents, 5 firms (50%) answered that the potential seemed to be large since this area has a good access to foreign market via Aktau Port, followed by that the potential seemed to be large since a large scale development such as Special Economic Zone is making progress by 4 firms (40%) and by that potential seemed to be large since this area become a distribution center of Kazakhstan as a whole by 3 firms (30%) as shown in Table 1.28. One firm answered that potential was not large since other areas/oblasts were more promising. Among logistics service providers in Aktau, the potential of Aktau or Mangistau Oblast was highly evaluated although number of samples is small.

(9) Issues or problems

For issues and problems, 5 firms (50%) chose “regulations and laws not well suited for the current situations of logistic services”, followed by “complex customs procedure” and “insufficient demand of freight cargo in the internal market of Kazakhstan” each chosen by 3 firms (30%) as shown in Table 1.29. The existing regulations and laws do not seem to be well adapted to the activities of logistic service providers in Aktau.

Table 1.28 Business Potential in Aktau or Mangistau Oblast

Potential of Aktau or Mangistau Oblast	Number	%*
1. Potential seems to be large since this area will be a distribution center of Kazakhstan as a whole.	3	30.0
2. Potential seems to be large since this area has a good access to foreign market via Aktau Port.	5	50.0
3. Potential seems to be large since a large-scale development such as Special Economic Zone is making progress.	4	40.0
4. Potential is not large since other areas/oblasts are more promising.	1	10.0
5. Potential has not changed for a certain period	0	0.0
Total (multiple answers; sample size=10)	13	-

*Ratio of the number of answers to the sample size (10)

Table 1.29 Issues or Problems in Business

Issues or problems in business	Number	%*
1. Infrastructure is not well developed.	1	10.0
2. Complex customs procedures	3	30.0
3. Severe competitiveness among other companies in terms of cost	0	0.0
4. Insufficient demand of freight cargo in the internal market of Kazakhstan	3	30.0
5. Insufficient demand of freight cargo in the regional market (Central Asia, CIS, etc.)	1	10.0
6. Regulations and laws are not well suited for the current situations of logistic services.	5	50.0
7. Others	0	0.0
Total (multiple answers; sample size=10)	13	-

*Ratio of the number of answers to the sample size (10)

1.5. Results of Industrial Survey Related to Distribution/Logistic Services

This section presents part of the result, which is closely related to distribution, of the Industrial Survey that was subcontracted to a local consulting firm and conducted in Aktau. The targeted group for this survey was manufactures in Mangistau Oblast. The number of samples collected in Aktau and Zhanaozen was 63.

1.5.1 Marketing of goods

More than two thirds (68%) of firms market their products only within the oblast. Supply beyond the oblast is carried out by 32%. Among them, a half of products were marketed to Atyrau Oblast, followed by Aktobe Oblast (40%), Astana City (35%), Western Kazakhstan Oblast (30%) and Almaty City (25%). Only 3% of firms export their product abroad.

The largest issue on marketing among respondents was “low competitive ability in terms of cost, quality and delivery” (35%), followed by “lack of information about market” (30%), “occasional or infrequent orders” (30%) and “insufficient productivity” (10%). For the enterprises that supply only within the limits of oblast the major obstacle was instability of instability of orders and insufficient production capacity of their enterprise.

1.5.2 Procurement of raw materials and working stock

Only 45% of firms procure raw materials and working stock within Mangistau oblast, while 31% of firms acquire raw materials from other oblasts and 24% of them obtain from abroad. Local raw materials are mainly used for oil processing enterprises. Light industry enterprises mainly use external sources. The main problem in acquiring of raw material is high cost of transportation. Relatively inexpensive marine and river transport is used by only a few firms. Sixty four (64) % of them use trucks and 35% use railways. Further, the majority of enterprises that buy materials from abroad complain on excessively complicated customs procedures.

CHAPTER 2 INDUSTRIAL SURVEY

2.1 Scope of Work and Methods

(1) Objective and scope of work

The industrial survey was conducted to clarify the existing conditions of industries in Mangistau Oblast and their prospects for further development. The survey covered the following tasks:

1) To reveal the management problems of Mangistau companies
2) To clarify interrelationships between the companies in Mangistau
3) To examine the ways to obtain market information required for production, research and technological development
4) To grasp the ways to control the product quality, production processes, and usage of existing equipment
5) To examine the methods of training of personnel at the companies
6) To identify the situation of export of products and problems associated with it
7) To clarify the financial sources, fund availability, and system of government financing, and associated problems
8) To reveal expectations by the companies concerning legislative and regulatory system of the Akimat and the Government
9) To examine opportunities for direct investments into industries in Mangistau

(2) Methods

The survey targeted initially to cover about 100 companies located in Aktau and Zhanaozen undertaking production with the number of employees not less than five. A list of potential companies to be covered was prepared based on the database provided by the JICA Study Team augmented by the sub-contracted firm. Practically all the companies in Aktau and Zhanaozen were covered, and the total number of the surveyed firms was 63. The product types and size distribution of surveyed enterprises are shown in Table 2.1.

The survey was conducted in September through October 2007 under the supervision of the project manager based in Almaty. Interviewers and field supervisors were trained by general training program of the sub-contractor and also by special training with materials tailored to the present survey.

Data entry was done by staff operators with PinPoint software. The check of entries of the questionnaire, data cleaning and control of data logic were done by a data processing specialist. With the help of a special applied statistics program of SPSS, specific sub-programs were developed to verify all the entered data. Processing of research results was done with the help of SPSS.

Table 2.1 Surveyed Enterprises in Mangistau Oblast by Field of Industry and Product

(1) Enterprises	Number	%
Production of rubber and plastic goods	14	22.2
Food products manufacture	12	19.0
Paper and cardboard production, publishing business	10	15.9
Textile and clothing industry	9	14.3
Production of other non-metal goods	9	14.3
Woodworking and wood products manufacture	5	7.9
Leather, leather products, shoes production	2	3.2
Oil products transportation and delivery	2	3.2
Total	63	100.0

(2) Products manufactured by the surveyed enterprises:

Field of industry	Product
Food products manufacture	Bakery production Confectionery production Production of sour milk products (kefir, sour cream, cottage cheese, yoghurt etc.) Milk processing Cheese production Carbonated beverages production Semi-prepared food production Beer, kvass production Meat products manufacture Spicery and seasoning production
Textile and clothing industry	Custom tailoring, clothes restoration Curtains tailoring Outer clothes, national costumes tailoring Working clothes tailoring
Leather, leather products, shoes production	Specialized shoes production Shoes production
Woodworking and wood products manufacture	Production of furniture for offices and apartments Production of built-in furniture
Paper and cardboard production, publishing business	Newspapers publication, printing Production of printed output Production of letterheads, business cards Manufacture of signboards, pamphlets Production of advertising polygraphic output Pulp and paper production
Oil products transportation and supply	
Production of rubber and plastic goods	Production of plastic windows Production of metal-plastic doors Accessories production Production of plastic and pipes of different diameter Manufacture of PVC products
Production of other non-metal goods	Production of crushed stone, stones Production of masonry units, shell rocks Production of bricks, wall panel

	<50 people		51-150 people		>150 people	
	No.	%	No.	%	No.	%
Food products manufacture	7	58.3	4	33.3	1	8.3
Textile and clothing industry	7	77.8	2	22.2		
Leather, leather products, shoes production	1	50.0	1	50		
Woodworking and wood products production	5	100				
Paper and cardboard production, publishing business	9	90	1	10		
Oil products transportation and supply	1	50	1	50		
Production of rubber and plastic goods	11	78.6	2	14.3	1	7.1
Production of other non-metal products	7	77.8	2	22.2		

2.2 Results of Survey

(1) Cooperation and interactions between enterprises

The survey has revealed that enterprises in Mangistau actively interact with each other. Enterprises in paper and cardboard production, and publishing business have the largest number of customers with 469, followed by food products manufacturing with 262 customers, textile and clothing with 98, and production of rubber and plastic goods with 94. The average for all the surveyed enterprises is 167 customers.

Majority of respondents are satisfied with the amount of transactions as well as overall cooperation with clients of the respective enterprises: 21% fully satisfies and 64% rather satisfied. Of all the heads of surveyed enterprises, 62% said they did not face serious problems at working with their clients. The problem of delayed payment was experienced by 25% of the respondents. Enterprises in paper and cardboard production and publishing have by far the largest number of business partners, followed by food products manufacture with 21 partners.

A majority (76%) of respondents said they had no problem working with their business partners. Breach of contractual obligations was faced by 10%, and delayed delivery of raw materials by 6% of the respondents. Only 21% of surveyed enterprises do not work with any sub-contractors, and the rest work with the average of four sub-contractors.

For 60% of the enterprises, major problem with suppliers is high cost of product delivery services, mentioned particularly by enterprises dealing with production of food products and rubber and plastic products. Other problems are delivery timing (40%), and poor quality of sub-contract products (14%). No problem with sub-contractors was reported by 22% of the enterprises.

(2) Management problems

Major management problems reported by the surveyed enterprises are shortages of fund (71%), competition in local market (71%), lack of manpower (57%), lack of advanced technology (52%), and insufficient production capacity (52%). All other problems, except environmental problem, were reported by more than one third of enterprises, including lack of support by Akimat or the Government, inappropriate infrastructure, difficulty in procuring materials, obsolete equipment/machinery, and difficulty in transportation.

Difficulties in recruitment and human resources management are represented by difficulties in finding well-qualified personnel reported by 59%, followed by staff turnover reported by 30%, difficulty at in-service training/re-training by 25%, lack of discipline and moral of workers by 24%, and staff's demand for higher wages by 14%.

(3) Access to Market Information

Sources of information used by the enterprises on production management, research and technological development are summarized in Table 2.2. Major sources of information on organization of production are instructions, normative documents, public and industry newspapers and magazines. Sources of information on research and technological development are mainly specialized prints.

Table 2.2 Information Sources for Production Management, Research and Technological Development

Source of information	Organization of production (%)	Research (%)	Technological development (%)
TV	19.0	11.1	12.7
Radio	7.9	7.9	4.8
Public newspapers, magazines	34.9	14.3	19.0
Special newspapers, magazines	31.7	28.6	36.5
Government prints	12.7	9.5	6.3
Professional associations special prints	23.8	7.9	11.1
Instructions, normative documents	34.9	14.3	15.9
Marketing research by the enterprise	20.6	12.7	19.0
Marketing research reports purchased by the enterprise	6.3	4.8	9.5
Competitive intelligence	7.9	14.3	6.3
Internet	14.3	11.1	12.7
None	7.9	31.7	15.9

A majority of the respondents (68%) were convinced that for development of advanced technologies at enterprises, they would need specialized courses and workshops. Other measures found necessary are consulting services (35%), and raising licensing skills (13%).

(4) Product Quality and Production Process Control

All the surveyed enterprises exercise their products quality control. In particular, the products get tested by means of state quality standards of Kazakhstan for 86% of enterprises, and 21% of enterprises, in textile and clothing and nonmetallic goods production, check their products for conformity with ISO. Nearly a half of respondents (46%) use a developed program of quality control system that implies checking for conformity with all-union state standards. Certification with laboratory tests of products is conducted by 14%, expertise, quality standard tests applied by 13%, and collection of complaints and suggestions conducted by 5%. No quality control system is applied by 30% of respondent enterprises, mainly in rubber and plastic production and publishing business.

(5) Employees training

In-service personnel training is conducted by 91% of surveyed enterprises. Employees acquire necessary skills and experiences at workplaces in 72% of surveyed enterprises. Employees are sent to seminars all over the Country by 12% of enterprises, and 11% of enterprises send their employees to training at the polytechnic/professional center. Only 5% of enterprises assist employees in receiving professional education abroad. Lack of employees training is characteristic of production of food products and textile and clothing industry.

(6) Marketing of products

Only one third of enterprises (32%) operating in Mangistau are engaging in supply of manufactured products to other regions. These are mainly large enterprises with sales turnover of US$200,000-500,000 and over US$1.0 million. They mostly engage in foodstuff production and paper and cardboard production, and publishing. Most of these enterprises supply mainly to neighboring oblasts: 50% to Atyrau and 40% to Aktobe. Other supply destinations are Astana (35% of the enterprises), West Kazakhstan (30%), Almaty (25%), Akmola (20%), and Kyzylordinsk (15%).

The problem of insufficient competitiveness, in terms of cost, quality and delivery was reported by 35% of surveyed enterprises, in wood works and wood products, rubber and plastic goods production, and production of other non-metallic products. Other problems are lack of information about the market reported by 30%, sporadic orders by 30%, insufficient productivity of enterprises by 10%, and difference in sales practice by 5%. These problems are reported in textile and clothing, and leather products and footwear industries.

On the supply side, main problems are sporadic orders reported by 40%, followed by insufficient productivity by 23%. Other problems are difference in sales practice (14%), lack of information about the market (12%), insufficient competitiveness (12%), supply-related formalities (9%), insufficient skills for accomplishing export procedures (5%), and Availability of regular clients in Oblast (5%).

Main problems that hamper the creation of favorable conditions for export are sporadic orders pointer out by 33% of respondents, insufficient competitiveness (23%), insufficient productivity (23%), difference in sales practice (16%), and insufficient information about the market (15%).

(7) Funding sources

Of the surveyed enterprises, 73% have credit experience and used loans. All these enterprises have taken credit with local commercial banks. Those enterprises that have not taken credit are mostly small employing less than 50 employees. Only 7% of enterprises applied to the Investment Fund of Kazakhstan for a credit. No enterprise has applied to the National Innovation Fund or Small Entrepreneurship Development Fund for financial support.

Of surveyed enterprises, 76% reported high interest rates as the major problem in taking a credit. Rigid requirements of a borrower to a credit receiver are a constraint for 39% of enterprises. Only 15% of surveyed enterprises did not have any difficulties in receiving a credit or loan.

(8) Conditions of equipment/machinery

Well over a half of surveyed enterprises (60%) are provided with equipment in good conditions, and 19% answered their equipment in excellent conditions. Enterprises with equipment needed serious repair constitute 21%. The average age of the equipment installed at surveyed enterprise is five years. Most obsolete equipment was revealed at enterprises dealing with leather and footwear manufacture with the average age of 10 years.

The equipment is renewed once a year or more often by 18% of surveyed enterprises, but the average replacement rate is once for every five years. The plan to replace the equipment is within the next 12 months by 21% of enterprises, and 2-3 years by 40%. No plan to purchase equipment within 10 years by 11% of enterprises.

(9) Production capacity

The production capacity utilization ratio of enterprises in Mangistau is 72% on an average. The highest capacity utilization ratio is in food products manufacture (85%), followed by paper and cardboard production and publishing (79%). Leather, leather products and footwear production has the lowest capacity utilization (55%). The maximum capacity utilization is in food products manufacture at 94%, followed by paper and cardboard production and publishing at 84%.

(10) Products delivery and transportation

Of the surveyed enterprises, 45% purchase raw materials within the Oblast, 31% in other regions of Kazakhstan, and 24% from abroad. Enterprises dealing with petroleum refining purchase raw materials mainly in Mangistau. Those in rubber and plastic production and leather and footwear production purchase raw materials abroad in larger volume than others.

High transportation cost is cited as main problem in procurement by 52% of surveyed enterprises. Other problems are delivery delay (24%), and difficult customs procedure (15%). The most popular mode of transportation for carrying goods is motor transport used by 64% of enterprises, followed by railway with 35%. Marine or river transport is used only by one enterprise.

(11) Expectation for infrastructure provision and business legislation

Improvement in transport infrastructure and water supply is considered most important by enterprises in Mangistau, receiving highest scores at 3.9 and 3.7, respectively out of the range between 1 for “not important at all” and 5 for “very important”. This is followed by electricity at 2.9, gas supply at 2.3, and telecommunications at 2.1. The development of Oblast infrastructure is expected by 25% of respondents, supply of good quality raw materials by 14%, and favorable conditions for small and medium business by 13%. Other suggestions are additional investment support, wide media coverage of small and medium business problems, and expansion and support for linkages between agricultural producers and processors.

Majority of surveyed enterprises (76%) have not received any support from research institute, university or others. In fact, 37% of respondent heads of enterprises said they would not need a support from the Akim or the government institutions. Consultations from the Akimat are expected by 30% of enterprises, while only 13% have actually receives such support. Employee training and professional information are required by 24% of enterprises, respectively, but only 8% of enterprises have received such support.

The most topical issue that requires a solution is tax reduction for Mangistau enterprises expected nationwide, and financial and information support expected in the Oblast. Other issues that have received attention of respondents are reduction in the number of audit, improvement in requirements for registration documents, and reinforcement of law on import substitution required at the national level.

For practical measures to stimulate industrial production in non-resources based sub-sectors, financial and information support, tax reduction for local business, and import restriction received relatively large support as shown in Table 2.3.

Table 2.3 Measures to Stimulate Industrial Production in Non-resources-based Sub-sectors

(Unit: %)

Measure	Nationwide	Mangistau Oblast
Financial & information support	14	19
Tax reduction for local business	11	8
Import restriction	11	10
Oblast infrastructure expansion & improvement	5	8
Support for supply of quality raw materials	2	0
No idea	59	57

(12) Opportunities for direct investment into Mangistau industries

As the factor to determine business development or investment, most important is the location of management in Mangistau with the score of 4.3 out of the range between 1 for "not important at all" and 5 for "very important". Other factors in the order of importance are political stability (4.1), domestic market potential (3.5), abundant resources in Mangistau (3.0), function as the regional industrial center for the enterprise (2.9), well-developed supporting industries (1.9), well established infrastructure (1.9), low salaries (1.7), and the Akimat's incentive measures for investment (1.3). Overwhelming majority of enterprises (98%) intend to continue operating in Mangistau.

An overwhelming majority of enterprises (92%) intend to expand their businesses. Only a small number of enterprises intend to switch to another type of activities or add new directions to their activities. Only one enterprise of leather, leather products and shoes production intends to move to another region because of the personal plans of the head of this organization. Expansion and production increase are intended by 53% of enterprises, 40% intend to diversify the range of products, and 5% intend to make new investments. Of the enterprises intending to expand their businesses, 43% plan to use external loans.

The average annual profits of surveyed enterprises are summarized in Table 2.4. The petroleum refining is by far the most profitable sub-sector.

Table 2.4 Revenues of Enterprises by Sub-sector

(Unit: US$)

Sub-sector	Annual revenue
Coke production, petroleum refining	4,000,000
Production of other non-metallic goods	612,200
Leather, leather products and footwear	288,000
Production of rubber and plastic goods	259,000
Food products manufacture	240,564
Textile and clothing	108,000
Woodworking and wood products	82,750
Paper and cardboard production and publishing	63,500
Average	287,228

CHAPTER 3 INVESTMENT POTENTIAL SURVEY

3.1 Objective

The objective of Investment Potential Survey (IPS) is to collect information from foreign and domestic investors operating in Kazakhstan on the level of their interest in making new investment in Mangistau Oblast and major factors they consider essential for making such an investment decision.

3.2 Methodology

An interview survey was conducted with a questionnaire at Almaty, Atyrau and Aktau. The total number of samples to be collected is 50. The number of companies interviewed at each location was 10 in Aktau, 30 in Almaty and 10 in Atyrau, respectively. The domestic companies with 100% domestic investment were included. The potentials of investment were evaluated in 5 levels (Excellent, Good, Fair, Bad, and No idea) in the questionnaire.

Number and Distribution of Samples

Survey location	Type of company			
	Oil/gas	Manuf.	Service	Total
Almaty	0	25 (5)	5 (2)	30
Aktau	2	6 (2)	2 (1)	10
Atyrau	2	6 (2)	2 (1)	10
Total	4	37 (9)	9 (4)	50

Note: Figures in ( ) are domestic companies.

3.3 Summary of Findings for Mangistau Oblast

(1) Selection of Mangistau Oblast as Investment Location

The reason for selecting Mangistau Oblast as investment location was “Good business chance” for all the 10 companies interviewed.

(2) Comparison of Mangistau Oblast with Atyrau Oblast

Those companies that compared Mangistau Oblast to Atyrau Oblast for business location numbered five, while the remaining 5 companies made no comparison.

(3) Evaluation of Investment and Business Climate in Mangistau

(a) Incentive Measures: Judgment was rather negative with “Fair” at 50% and “Bad” at 30%, while “good” was only 20%.

(b) Infrastructure: “Infrastructure” factor is evaluated in a split manner “Good” and “Fair” respectively accounting for 50%.

(c) Wage Level of Labor: “Wage” factor is evaluated in a split manner with “Excellent” and “Good” combined and “Fair” and “Bad” combined respectively accounting for 50%.

(d) Quality of Labor: View on the “Quality of labor” was split between “Good” at 50% and “Fair” and “Bad” combined at 50%.

(e) Availability of Qualified Labor: Positive view of “Good” for availability of qualified labor accounted for 60%, while “Fair” and “Bad” combined was 40%.

(f) Access to Domestic Market: Evaluation was split between “Excellent” and “Good” combined and “Fair” accounting for 50% respectively.

(g) Access to Foreign Market: The “ Access to foreign market” factor was evaluated positively with “Excellent” and “Good” combined at 67%.

(h) Easiness in Acquiring Raw Materials: There seems to be problem in acquiring raw materials with “Fair” and “Bad” combined accounting for 60%.

(i) Easiness in Procuring Spare Parts: Difficulty in obtaining spare parts is observed with “Fair” and “Bad” combined accounting for 67%, excluding “no idea”.

(j) Simplicity in Procedures: Evaluation on “Simplicity in procedure” was negative with “Fair” and “Bad” combined accounting for 67%, excluding “no idea”.

(k) Clearness and Stability of Laws and Regulations: The judgment was negative with “Fair” and “Bad” combined accounting for 70%.

(l) Provision of Information by Government on Investment Climate: Negative judgment accounted for 90% including “Fair” at 70% and “Bad” at 20%.

(m) Access to Financial Assistance by Government: Nine out of the 10 companies regarded the situation of financial assistance by the government negatively with “Fair” and “Bad” accounting for 100% as combined and one company responded with “no idea”.

(n) Overall Support by Government: Negative judgment accounted for 100% including “Fair” at 60% and “Bad” at 40%.

(o) Cleanliness of Government: Excluding one company answering “no idea”, negative judgment accounted for 63% including “Fair” at 25% and “Bad” at 38%.

(4) Overall Evaluation of Investment/business Climate in Mangistau Oblast

Positive evaluation accounted for 70% (“Good”), while negative evaluation (“Fair”) reached 30%.

(5) Level of Human Resource Problem

There was a split view on the human resources factor with 5 companies answering “no problem” and the remaining 5 companies having human resources problem in different degrees (“some problem” at 40% and “big problem” at 10%).

(6) Kind of Human Resources Problem

Three kinds of problems were cited: “high turn-over rate” at 50%, “shortage of skilled workers” at 33% and ”shortage of qualified managers” at 17%.

(7) Sources of Recruitment

Most sources of recruitment are Mangistau Oblast both for mangers (90%) and workers (70%).

(8) Measures for Human Resources Development

50% of the companies interviewed provided no training to their workers. Other companies either provide internal training (30%), dispatching their workers to existing training centers in Mangistau (10%) or dispatching their workers to existing training centers in other part of Kazakhstan (10%)

(9) Area requiring Skill Development

All kinds of areas presented were selected by the interviewed companies with “financial management” as the highest at 31% followed by “English language” and “technical skill” respectively at 23%, “basic education” at 15% and “personnel management” at 8%.

(10) Expectation to Government for Human Resources Development

The following measures are expected to be taken by the government.

	# of respondents
• Strengthening skill development in Aktau:	5
• Provision of financial assistance to training programs provided by companies:	3
• Strengthening skill development in other part of Kazakhstan:	3
• Strengthening basic education:	3

(11) Possibility of Local Procurement of Raw Materials, Machinery/Equipment and Spare Parts

Those companies seeing low or no possibility in procuring raw materials, machinery/equipment and spare parts accounted for 60%, while the remaining companies were positive with “some possibility” at 30% and “high possibility” at 10%.

Question		Good business chance	Political reason	Other	Total
Q3.1	Reason for investment in Mangistau	10	0	0	10
	%	100.0	0.0	0.0	100.0

Question		Compared	Not compared	Total
Q3.2	Comparison of Atyrau and Mangistau	5	5	10
	%	50.0	50.0	100.0

	Factors		Excellent	Good	Fair	Bad	No idea	Total
Q3.5	a. Incentive measures	No.	0	2	5	3	0	10
		%	0.0	20.0	50.0	30.0	0.0	100.0
		% excl. "no idea"	0.0	20.0	50.0	30.0		100.0
	b. Infrastructure	No.	0	5	5	0	0	10
		%	0.0	50.0	50.0	0.0	0.0	100.0
		% excl. "no idea"	0.0	50.0	50.0	0.0		100.0
	c. Wage level of labor	No.	1	4	4	1	0	10
		%	10.0	40.0	40.0	10.0	0.0	100.0
		% excl. "no idea"	10.0	40.0	40.0	10.0		100.0
	d. Quality of labor	No.	0	5	4	1	0	10
		%	0.0	50.0	40.0	10.0	0.0	100.0
		% excl. "no idea"	0.0	50.0	40.0	10.0		100.0
	e. Availability of qualified labor	No.	0	6	2	2	0	10
		%	0.0	60.0	20.0	20.0	0.0	100.0
		% excl. "no idea"	0.0	60.0	20.0	20.0		100.0
	f. Access to domestic market	No.	1	4	5	0	0	10
		%	10.0	40.0	50.0	0.0	0.0	100.0
		% excl. "no idea"	10.0	40.0	50.0	0.0		100.0
	g. Access to foreign market	No.	1	5	0	3	1	10
		%	10.0	50.0	0.0	30.0	10.0	100.0
		% excl. "no idea"	11.1	55.6	0.0	33.3		100.0
	h. Easiness in acquiring raw materials	No.	1	3	4	2	0	10
		%	10.0	30.0	40.0	20.0	0.0	100.0
		% excl. "no idea"	10.0	30.0	40.0	20.0		100.0

	Factors		Excellent	Good	Fair	Bad	No idea	Total
Q3.5	i. Easiness in procuring spare parts locally	No.	0	3	2	4	1	10
		%	0.0	30.0	20.0	40.0	10.0	100.0
		% excl. "no idea"	0.0	33.3	22.2	44.4		100.0
	j. Simplicity in procedures	No.	0	3	3	3	1	10
		%	0.0	30.0	30.0	30.0	10.0	100.0
		% excl. "no idea"	0.0	33.3	33.3	33.3		100.0
	k. Clearness and stability of laws and regulations	No.	0	3	6	1	0	10
		%	0.0	30.0	60.0	10.0	0.0	100.0
		% excl. "no idea"	0.0	30.0	60.0	10.0		100.0
	l. Provision of information by government on investment climate	No.	0	1	7	2	0	10
		%	0.0	10.0	70.0	20.0	0.0	100.0
		% excl. "no idea"	0.0	10.0	70.0	20.0		100.0
	m. Access to financial assistance by government	No.	0	0	4	4	1	9
		%	0.0	0.0	44.4	44.4	11.1	100.0
		% excl. "no idea"	0.0	0.0	50.0	50.0		100.0
	n. Overall support by government	No.	1	1	6	2	0	10
		%	10.0	10.0	60.0	20.0	0.0	100.0
		% excl. "no idea"	10.0	10.0	60.0	20.0		100.0
	o. Cleanliness of government	No.	1	2	2	3	2	10
		%	10.0	20.0	20.0	30.0	20.0	100.0
		% excl. "no idea"	12.5	25.0	25.0	37.5		100.0
Q3.6	Overall evaluation of Mangistau's investment/ business climate	No.	0	7	3	0	0	10
		%	0.0	70.0	30.0	0.0	0.0	100.0
		% excl. "no idea"	0.0	70.0	30.0	0.0		100.0

		Item	No problem	Some problem	Big problem	No idea	Total
Q4.1	Human resources problem	No.	5	4	1	0	10
		%	50.0	40.0	10.0	0.0	100.0
		% excl. "no idea"	50.0	40.0	10.0	0.0	100.0

		Item	Shortage of qualified manager level people	Shortage of skilled workers	High turnover rate	Other	Total
Q4.2	Kind of human resources problem	No.	1	2	3	0	6
		%	16.7	33.3	50.0	0.0	100.0

		Item	Mangistau Oblast	Foreign country	Other part of Kazakhstan	Other	Total
Q4.3	Source of recruiting managers	No.	9	0	1	0	10
		%	90.0	0.0	10.0	0.0	100.0
Q4.4	Source of recruiting workers	No.	7	0	3	0	10
		%	70.0	0.0	30.0	0.0	100.0

		Item	No special training	Internal training by our company	Dispatching staff/workers to existing training centers in Mangistau Oblast	Dispatching staff/workers to programs in other part of Kazakhstan	Dispatching staff/workers to programs in other countries	Other	Total
Q4.5	Measures taken for skill training	No.	5	3	1	1	0	0	10
		%	50.0	30.0	10.0	10.0	0.0	0.0	100.0

		Item	Technical skill	Financial management	Personnel management	English proficiency	Basic education	Other	Total
Q4.6	Area of skill requiring training	No.	3	4	1	3	2	0	13
		%	23.1	30.8	7.7	23.1	15.4	0.0	100.0

Q4.7	Kind of government support needed	Item	Strengthen skill training programs in Mangistau Oblast	Provide financial assistance to training programs provided by companies	Strengthen training programs in other part of Kazakhstan	Develop scholarship program	Strengthen basic education program	Other	Total
		No.	5	3	3	3	3	0	17
		%	29.4	17.6	17.6	17.6	17.6	0.0	100.0

Q5.4	Possibility of local procurement of raw materials, machinery/equipment and spare parts	Item	Low/no possibility	Some possibility	High possibility	Other	Total
		No.	6	3	1	0	10
		%	60.0	30.0	10.0	0.0	100.0

3.4 Summary of Findings for Almaty

(1) View on business chance in Mangistau Oblast

The proportion of the companies positively evaluating the business chance in Mangistau Oblast was as high as 70% including “Very high” at 23.3% and “High” at 46.7%.

(2) Possibility of investment in Mangistau Oblast

Those companies with high interest in making investment in Mangistau Oblast were also high at 80% including “Very high” at 50.0% and “High” at 30.0%.

(3) Evaluation of investment and business climate in Mangistau Oblast

(a) Incentive measures: Those companies that were able to make judgment accounted for 69% with the rest having “no idea”. Among these companies, 70% rated incentive measures in Mangistau Oblast positively with “Excellent” at 15% and “Good” at 55%.

(b) Infrastructure: Those companies that were able to make judgment accounted for 70% with the rest having “no idea”. “Infrastructure” factor is evaluated rather negatively with “Fair” at 57.1% and “Bad” at 9.5%, both combined at 66.6%.

(c) Wage level of labor: All the companies were able to make judgment. “Wage” factor is evaluated rather negatively with “Fair” at 43.3% and “Bad” at 20.0%, both combined at 63.3%.

(d) Quality of labor: Those companies that were able to make judgment accounted for 80% with the rest having “no idea”. The companies positively evaluating “quality of labor” accounted for 62.5% including “Excellent” at 29.2% and “Good” at 33.3%.

(e) Availability of qualified labor: Those companies that were able to make judgment accounted for 73.3% with the rest having “no idea”. The “availability of qualified labor” factor was evaluated in a split manner with positive judgment and negative judgment at 50% respectively.

(f) Access to domestic market: Judgment was split into positive and negative at 50% each.

(g) Access to foreign market: Judgment was also split into positive and negative at 50% each.

(h) Easiness in acquiring raw materials: Those companies that were able to make judgment accounted for 70% with the rest having “no idea”. Those companies that judge negatively accounted for 61.9% including “Fair” at 47.6% and “Bad” at 14.3%.

(i) Easiness in procuring spare parts: Those companies that were able to make judgment accounted for 80% with the rest having “no idea”. The judgment was somewhat split with positive one at 54.2% and negative one at 45.8%.

(j) Simplicity in procedures: Those companies that were able to make judgment accounted for 76.7% with the rest having “no idea”. Those companies that judge positively accounted for 60.8% including “Excellent” at 4.3% and “Good” at 56.5%.

(k) Clearness and stability of laws and regulations: Those companies that were able to make judgment accounted for 90% with the rest having “no idea”. The judgment was somewhat split with positive one at 48.1% and negative one at 51.9%.

(l) Provision of information by Government on investment climate: Those companies that were able to make judgment accounted for 76.7% with the rest having “no idea”. Negative judgment accounted for 69.6% including “Fair” at 14.3% and “Bad” at 47.6%.

(m) Access to financial assistance by Government: Those companies that were able to make judgment accounted for 70% with the rest having “no idea”. Negative judgment accounted for 61.9% including “Fair” at 17.4% and “Bad” at 52.2%.

(n) Overall support by Government: Those companies that were able to make judgment accounted for 70% with the rest having “no idea”. Negative judgment accounted for 61.9% including “Fair” at 19.0% and “Bad” at 42.9%.

(o) Cleanliness of Government: Those companies that were able to make judgment accounted for 58.6% with the rest having “no idea”. Negative judgment accounted for 58.8% including “Fair” at 17.6% and “Bad” at 41.2%.

Question		Very high	High	Fair	Low	No idea	Total
3.1 View on Business Chance in Mangistau	No.	7	14	6	2	1	30
	%	23.3	46.7	20.0	6.7	3.3	100.0
3.2 Possibility of Companies in Making Investment in Mangistau	No.	15	9	2	4		30
	%	50.0	30.0	6.7	13.3		100.0

3.4 Evaluation of Investment/Business Climate of Mangistau Oblast

Factors		Excellent	Good	Fair	Bad	No idea	Total
a. Incentive measures	No.	3	11	3	3	9	29
	%	10.3	37.9	10.3	10.3	31.0	100.0
	% excl. "no idea"	15.0	55.0	15.0	15.0		100.0
b. Infrastructure	No.	3	4	12	2	9	30
	%	10.0	13.3	40.0	6.7	30.0	100.0
	% excl. "no idea"	14.3	19.0	57.1	9.5		100.0
c. Wage level of labor	No.	6	5	13	6	0	30
	%	20.0	16.7	43.3	20.0	0.0	100.0
	% excl. "no idea"	20.0	16.7	43.3	20.0		100.0
d. Quality of labor	No.	7	8	6	3	6	30
	%	23.3	26.7	20.0	10.0	20.0	100.0
	% excl. "no idea"	29.2	33.3	25.0	12.5		100.0
e. Availability of qualified labor	No.	5	6	6	5	8	30
	%	16.7	20.0	20.0	16.7	26.7	100.0
	% excl. "no idea"	22.7	27.3	27.3	22.7		100.0
f. Access to domestic market	No.	7	7	10	4	2	30
	%	23.3	23.3	33.3	13.3	6.7	100.0
	% excl. "no idea"	25.0	25.0	35.7	14.3		100.0
g. Access to foreign market	No.	2	8	4	6	9	29
	%	6.9	27.6	13.8	20.7	31.0	100.0
	% excl. "no idea"	10.0	40.0	20.0	30.0		100.0
h. Easiness in acquiring raw materials	No.	3	5	10	3	9	30
	%	10.0	16.7	33.3	10.0	30.0	100.0
	% excl. "no idea"	14.3	23.8	47.6	14.3		100.0
i. Easiness in procuring spare parts locally	No.	3	10	8	3	6	30
	%	10.0	33.3	26.7	10.0	20.0	100.0
	% excl. "no idea"	12.5	41.7	33.3	12.5		100.0

Factors		Excellent	Good	Fair	Bad	No idea	Total
j. Simplicity in procedures	No.	1	13	7	2	7	30
	%	3.3	43.3	23.3	6.7	23.3	100.0
	% excl. "no idea"	4.3	56.5	30.4	8.7		100.0
k. Clearness and stability of laws and regulations	No.	3	10	10	4	3	30
	%	10.0	33.3	33.3	13.3	10.0	100.0
	% excl. "no idea"	11.1	37.0	37.0	14.8		100.0
l. Provision of information by government on investment climate	No.	2	5	4	12	7	30
	%	6.7	16.7	13.3	40.0	23.3	100.0
	% excl. "no idea"	8.7	21.7	17.4	52.2		100.0
m. Access to financial assistance by government	No.	2	6	3	10	9	30
	%	6.7	20.0	10.0	33.3	30.0	100.0
	% excl. "no idea"	9.5	28.6	14.3	47.6		100.0
n. Overall support by government	No.	6	2	4	9	9	30
	%	20.0	6.7	13.3	30.0	30.0	100.0
	% excl. "no idea"	28.6	9.5	19.0	42.9		100.0
o. Cleanliness of government	No.	3	4	3	7	12	29
	%	10.3	13.8	10.3	24.1	41.4	100.0
	% excl. "no idea"	17.6	23.5	17.6	41.2		100.0

3.5 Summary of Findings for Atyrau

(1) Selection of Atyrau as investment location

The reasons for selecting Atyrau were split into “Good business chance” and “Other”. No information was collected for “other” reasons.

(2) Comparison of Atyrau oblast with Mangistau Oblast

Those companies that compared Mangistau Oblast to Atyrau Oblast for business location number two out of ten. The reasons of these two companies for selecting Atyrau were “good prospect in building demand” and “large oil deposit.”

(3) Evaluation of investment and business climate in Atyrau

(a) Incentive Measures: Those companies that were able to make judgment accounted for 88.9% with the rest having “no idea”. Among these companies, 87.5% rated incentive measures in Atyrau Oblast negatively with “Fair” at 75% and “Bad” at 12.5%.

(b) Infrastructure: “Infrastructure” factor is evaluated rather favorably with “Good” at 66.7%.

(c) Wage level of labor: All the companies were able to make judgment. “Wage” factor is evaluated positively with “Good” at 77.8%.

(d) Quality of labor: All the companies were able to make judgment. “Quality of labor” factor is found to be a serious problem with “Bad” and “Fair” accounting for 66.7% and 33.3% respectively.

(e) Availability of qualified labor: As is the case for the quality of labor, judgment was negative with “Bad” and “Fair” accounting for 66.7% and 33.3% respectively.

(f) Access to domestic market: “ Access to domestic market” is found to have some problem with “Fair” accounting for 88.9%.

(g) Access to foreign market: The “Access to foreign market” factor is even worse with “Bad” at 25% and “Fair” at 75%.

(h) Easiness in acquiring raw materials: Those companies that judge negatively accounted for 88.9% including “Fair” at 77.8% and “Bad” at 11.1%.

(i) Easiness in procuring spare parts: The situation in procuring spare parts locally is even worse with “Bad” at 33.3% and “Fair” at 66.7%.

(j) Simplicity in procedures: Those companies that judge positively accounted only for 11.1% with the rest either “Fair” at 66.7% or “Bad” at 22.2%.

(k) Clearness and stability of laws and regulations: The judgment was negative with “Fair” at 77.8% and “Bad” at 22.2%.

(l) Provision of information by Government on investment climate: Negative judgment accounted for 100% including “Fair” at 62.5% and “Bad” at 37.5%.

(m) Access to financial assistance by Government: Those companies that were able to make judgment were only 3 out of 8. All of those 3 companies rated “access to financial assistance by government” as “Fair”.

(n) Overall support by Government: Negative judgment accounted for 100% including “Fair” at 62.5% and “Bad” at 37.5%.

(o) Cleanliness of Government: Negative judgment accounted for 100% including “Fair” at 50.0% and “Bad” at 50.0%.

(4) Overall evaluation of investment/business climate in Atyrau oblast

Positive evaluation accounted for 33.3% (“Good”), while negative evaluation (“Fair”) reached 66.7%.

(5) Level of human resource problem

The companies facing human resources problem accounted for 90%. 7 out of 9 companies answered there are “some problems” concerning human resources, whereas 2 answered “there is a big problem.”

(6) Kind of human resources problem

There were 4 companies that reported problems associated with human resources. All of them indicated “shortage of skilled workers” as the problem.

(7) Sources of recruitment

Most sources of recruitment are Atyrau Oblast both for mangers (75%) and workers (89%).

(8) Measures for human resources development

There are 5 companies (55.6%), which provide no training to their staff or workers. Two forms of training are reported, internal training by companies (2) and dispatch of their staff or workers to foreign country (Sancto Petersburg, Russia)

(9) Area requiring skill development

There are 3 companies indicating the need for technical training, whereas 2 companies pointed to the need for strengthening basic education.

(10) Expectation to Government for human resources development

The following measures are expected to be taken by the government.

	# of respondents
• Strengthening skill development in Atyrau:	3
• Strengthening basic education:	2
• Provision of financial assistance to training programs provided by companies:	1
• Strengthening skill development in other part of Kazakhstan:	1

(11) Possibility of local procurement of raw materials, machinery/equipment and spare parts

More than half (57.2%) of the companies indicated there are either some possibilities (42.9%) or high possibility (14.3%) for localizing procurement of raw materials, machinery/equipment and spare parts.

Question		Good business chance	Political reason	Other	Total
Q3.1	Reason for investment in Atyrau	5	0	5	10
	%	50.0	0.0	50.0	100.0

Question		Compared	Not compared	Total
Q3.2	Comparison of Atyrau and Mangistau	2	8	10
	%	20.0	80.0	100.0

3.5 Evaluation of Investment/Business Climate of Atyrau

	Factors		Excellent	Good	Fair	Bad	No idea	Total
Q3.5	a. Incentive measures	No.	0	1	6	1	1	9
		%	0.0	11.1	66.7	11.1	11.1	100.0
		% excl. "no idea"	0.0	12.5	75.0	12.5		100.0
	b. Infrastructure	No.	0	6	3	0	0	9
		%	0.0	66.7	33.3	0.0	0.0	100.0
		% excl. "no idea"	0.0	66.7	33.3	0.0		100.0
	c. Wage level of labor	No.	0	7	2	0	0	9
		%	0.0	77.8	22.2	0.0	0.0	100.0
		% excl. "no idea"	0.0	77.8	22.2	0.0		100.0
	d. Quality of labor	No.	0	0	3	6	0	9
		%	0.0	0.0	33.3	66.7	0.0	100.0
		% excl. "no idea"	0.0	0.0	33.3	66.7		100.0
	e. Availability of qualified labor	No.	0	0	3	6	0	9
		%	0.0	0.0	33.3	66.7	0.0	100.0
		% excl. "no idea"	0.0	0.0	33.3	66.7		100.0
	f. Access to domestic market	No.	0	1	8	0	0	9
		%	0.0	11.1	88.9	0.0	0.0	100.0
		% excl. "no idea"	0.0	11.1	88.9	0.0		100.0
	g. Access to foreign market	No.	0	0	6	2	1	9
		%	0.0	0.0	66.7	22.2	11.1	100.0
		% excl. "no idea"	0.0	0.0	75.0	25.0		100.0
	h. Easiness in acquiring raw materials	No.	0	1	7	1	0	9
		%	0.0	11.1	77.8	11.1	0.0	100.0
		% excl. "no idea"	0.0	11.1	77.8	11.1		100.0
	i. Easiness sin procuring spare parts locally	No.	0	0	6	3	0	9
		%	0.0	0.0	66.7	33.3	0.0	100.0
		% excl. "no idea"	0.0	0.0	66.7	33.3		100.0
	j. Simplicity in procedures	No.	0	1	6	2	1	10
		%	0.0	10.0	60.0	20.0	10.0	100.0
		% excl. "no idea"	0.0	11.1	66.7	22.2		100.0
	k. Clearness and stability of laws and regulations	No.	0	0	7	2	0	9
		%	0.0	0.0	77.8	22.2	0.0	100.0
		% excl. "no idea"	0.0	0.0	77.8	22.2		100.0

	Factors		Excellent	Good	Fair	Bad	No idea	Total
Q3.5	l. Provision of information by government on investment climate	No.	0	0	5	3	1	9
		%	0.0	0.0	55.6	33.3	11.1	100.0
		% excl. "no idea"	0.0	0.0	62.5	37.5		100.0
	m. Access to financial assistance by government	No.	0	0	3	0	5	8
		%	0.0	0.0	37.5	0.0	62.5	100.0
		% excl. "no idea"	0.0	0.0	100.0	0.0		100.0
	n. Overall support by government	No.	0	0	5	3	1	9
		%	0.0	0.0	55.6	33.3	11.1	100.0
		% excl. "no idea"	0.0	0.0	62.5	37.5		100.0
	o. Cleanliness of government	No.	0	0	4	4	1	9
		%	0.0	0.0	44.4	44.4	11.1	100.0
		% excl. "no idea"	0.0	0.0	50.0	50.0		100.0
Q3.6	Overall evaluation of Atyrau's investment/business climate	No.	0	3	6	0	1	10
		%	0.0	30.0	60.0	0.0	10.0	100.0
		% excl. "no idea"	0.0	33.3	66.7	0.0	0.0	100.0

		Item	No problem	Some problem	Big problem	No idea	Total
Q4.1	Human resources problem	No.	1	7	2	0	10
		%	10.0	70.0	20.0	0.0	100.0
		% excl. "no idea"	10.0	70.0	20.0	0.0	100.0

		Item	Shortage of qualified manager level people	Shortage of skilled workers	High turnover rate	Other	Total
Q4.2	Kind of human resources problem	No.	0	4	0	0	4
		%	0.0	100.0	0.0	0.0	100.0

		Item	Atyrau Oblast	Foreign country	Other part of Kazakhstan	Other	Total
Q4.3	Source of recruiting managers	No.	6	0	1	1	8
		%	75.0	0.0	12.5	12.5	100.0
Q4.4	Source of recruiting workers	No.	8	0	1	0	9
		%	88.9	0.0	11.1	0.0	100.0

		Item	No special training	Internal training by our company	Dispatching staff/workers to existing training centers in Atyrau Oblast	Dispatching staff/workers to programs in other part of Kazakhstan	Dispatching staff/workers to programs in other countries	Other	Total
Q4.5	Measures taken for skill training	No.	5	2	0	0	1	1	9
		%	55.6	22.2	0.0	0.0	11.1	11.1	100.0

		Item	Technical skill	Financial management	Personnel management	English proficiency	Basic education	Other	Total
Q4.6	Area of skill requiring training	No.	3	0	0	0	2	0	5
		%	60.0	0.0	0.0	0.0	40.0	0.0	100.0

		Item	Strengthen skill training programs in Atyrau Oblast	Provide financial assistance to training programs provided by companies	Strengthen training programs in other part of Kazakhstan	Develop scholarship program	Strengthen basic education program	Other	Total
Q4.7	Kind of government support needed	No.	3	1	1	0	2	0	7
		%	42.9	14.3	14.3	0.0	28.6	0.0	100.0

		Item	Low/no possibility	Some possibility	High possibility	Other	Total
Q5.4	Possibility of local procurement of raw materials, machinery/equipment and spare parts	No.	3	3	1	0	7
		%	42.9	42.9	14.3	0.0	100.0

CHAPTER 4 SURVEY ON RURAL DEVELOPMENT

4.1 Introduction

The survey was conducted in the view of the regional strategy of development of rural territories of Mangistau Oblast. The strategy is implemented by the oblast Akimat with the help of JICA. The methodology and major instruments of the survey were developed by the JICA Study Team and were adapted by BISAM with subsequent agreement of the final instruments with the Client. The task of the survey was to describe real situation in villages and problems of residents of villages of Mangistau Oblast.

Results of the survey are intended to help to identify the potential of development of each of the surveyed villages in accordance with principles and objectives of the State Program on Rural Development of the Republic of Kazakhstan for 2004-2010.

4.2 Objectives of the Survey

To understand living conditions and existing problems in rural societies.

To support the formulation of more feasible projects by understanding intentions and needs of local societies and raising interests of local communities towards regional development.

4.3 Survey Components

The survey comprised three components:

1) Survey of villages/interview with key informants of each village (Village survey)
2) Survey of households and peasant farms in five villages selected for this purpose (household/farm survey)
3) Organization of workshops/focus group discussions in the same villages that were studied during the survey of households and peasant farms (Focus group discussion)

4.4 Summary of Village Survey Results

(1) Methodology

The survey covered all the rural areas of Mangistau oblast. Out of 52 settlements 42 villages were selected. 10 settlements consisting of 2-5 households were excluded from the sample because of insignificant importance for the objectives of the study.

The survey was done with application of in-depth interview technique. Key informants were recruited among akims or deputy akims of rural counties, heads of enterprises and establishments playing important role for the surveyed villages, the most authoritative and well informed residents of villages/local informal leaders.

Total number of conducted interview was 80. All the interviews were audio recorded.

For of each interview transcripts were made. This helped to summarize the collected qualitative information. The quantitative information that contained in interviews was SPSS processed.

(2) Village infrastructure

Water supply

Except for the villages located in suburban of Zhanaozen and Aktau cities where tap water was 100% available, on average 44% of rural populations in Beyneu, Mangistau, Tupkaragan and Karakiya used underground water from wells, 50% from pipeline water and 7% from delivered water by truck. Water delivery by truck was only found in Mangistau and Karakiya rayons. Most of villages reported water quality satisfactory, except for 6 villages in Mangistau rayon. At most villages the water was characterized as "soft". Pollution of water was reported at some villages in Tupkaragan and Mangistau rayons.

Electrification

According to the results of the survey power supply in villages is stable and permanent. In villages of suburban of Aktau city and Zhanaozen cities, as well as in villages of Mangistau and Beyneu rayons power supply was permanent (100%). However, in villages of Tupkaragan (25%) and Karakiya (14%) rayons power cut was reported mainly by strong winds.

Gas supply

Most of the villages have gas supply system. Majority of villages were provided with centralized gas supply but some villages (Mangistau (41%), Beyneu(18%), Tupkaragan(50%), and Karakiyan (14%)) used delivered gas cylinders/containers. 14% of villages in Karakiyan rayon there was no gas supply.

Roads

The majority of villages of four rayons had no asphalt-paved roads (64% in Beineu, 65% in Mangistau, 25% in Tupkaragan, 43% in Karakiya rayons). Only in suburban villages of Aktau and Zhanaozen cities all the roads were paved.

Size and structure of rural family

Typical family size was 6 persons with 4 children except for Mangistau rayon (5 persons).

Source of household income

Households received their main income from salary (wages of employees of budget organizations, pensions, allowances), Sales of agricultural products produced on their own farms and others (casual work, etc.). Sales of agricultural products were more common in Karakiya rayon (100%) than other rayons (Beyneu (82%), Mangistau (77%), Tupkaragan (75%) and none for Aktau/Zhanaozen). Casual work was less likely to be found in Tupkaragan (25%) than others (Beyneu (55%), Mangistau (65%), Karakiya (43%), Aktau (50%) and Zhanaozen (100%).

Products in settlements were usually sold either directly to the market or through the middlemen. The percentage of villages with sales with middlemen were varied, low in Beineu (18%) and high in Karakiya rayon (71%) as shown in Figure 4.1. It should be noted that all the villagers sell products directly in Aktau but through middlemen in Zhanaozen.

Land use

Rural settlements of Mangistau Oblast were surrounded by pastures. Lands are not allocated for the crop cultivation because of the absence of water. Pastures in all the settlements were permanent. It is likely that pasture conditions are worse in the villages near Aktau and Zhanaozen cities.

Education system

In most settlements the main educational establishment was a comprehensive school (1-11 grades). In some settlements of Karakiya (29%) and Tupkaragan (25%) and Mangistau (18%) rayons there was no school for primary education. Vocational schools were found in the villages of Beineu (18%), Mangistau (18%) rayons, and Aktau city (50%). One hundred percent adult literacy rate was reported in all the rayons but Beyneu where the illiteracy rate was 1%.

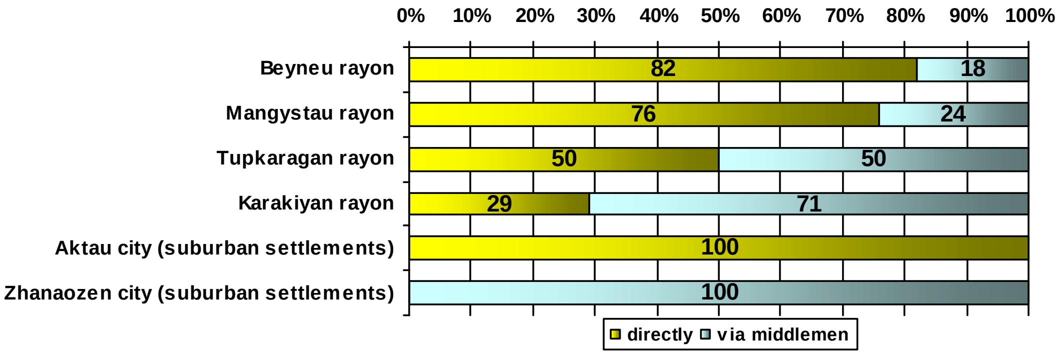


Figure 4.1 Methods to Sell Farm Products

Healthcare

In the settlements of Mangistau Oblast, there were four types of health care center (hospitals, ambulance station and medical stations, and outpatient clinic. Small medical stations prevail in Zhanaozen (100%), Tupkaragan (75%) and Aktau (50%) as shown in Figure 4.2. Some settlements had no healthcare facility in Karakiya (30%) and Mangistau (20%) rayons. Hospitals were usually located at the rayon centers or in the city.

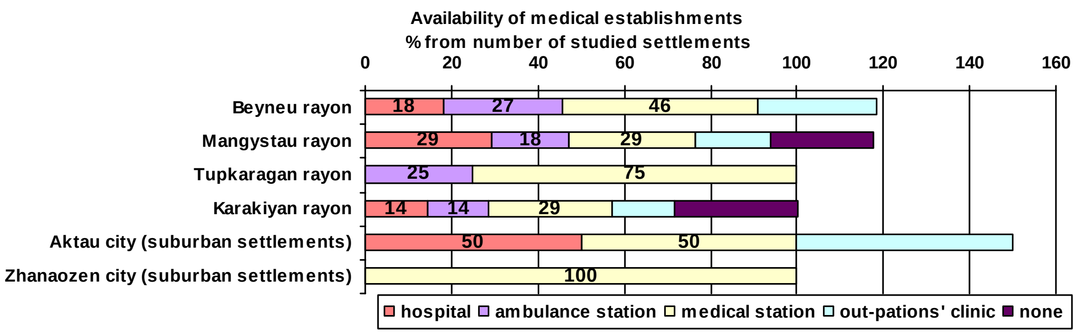


Figure 4.2 Availability of Medical Facilities

Environment protection problems

Major environmental problems were desertification (100% in Beineu and Mangistau and 80% in Karakiya rayons), abandoned oil wells (100% in Zhanaozen), water and air pollution (25% in Tupkaragan and 18% in Beyneu rayons).

Governmental/State support

Most common state support was credits/loans, while technical assistance as well as extension services is also provided. Subsidies are less likely to be provided (9% in Beineu) as shown in Figure 4.3. No state support was reported at the settlements in the suburb of Aktau city (50%), Karakiya (14%) and Mangistau rayon (12%).

The effectiveness of the state support was evaluated by three ranks (high, medium and low). Medium scores were reported at most villages. Low scores were mainly revealed in Mangistau and Karakiya rayons, 16 and 15% respectively. High scores were reported in Tupkaragan rayon (25%).

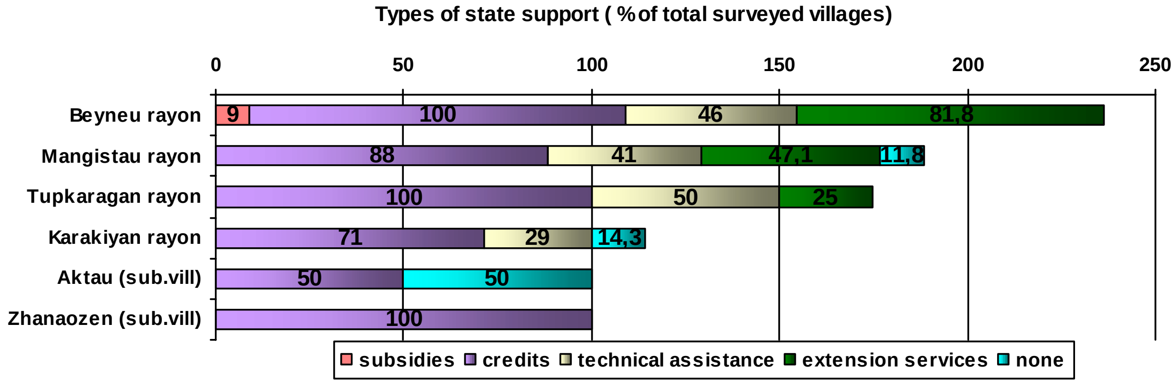


Figure 4.3 Types of State Support in Rural Settlements

4.5 Summary of Households/Farms Survey and Focus Group Discussions with Villagers

(1) Methodology

Household/farm survey and workshops were conducted in the same villages. The typical villages having sufficient number of populations to provide representative sample for the surveyed rayon were selected. For the survey of household/farm the method of personal formalized interview was applied. Twenty families were interviewed per each five villages (100 interviews, 57 with households who reside in the village, and 43 with peasant farms who have their own farms).

Households and peasant farms in the each village were selected by route sampling. In each village a head of a household/farm (if possible) or another person capable of giving the most complete information was interviewed. The samples were selected only from households or peasant farms who produce and sell livestock products. Sample size was representative in general for each particular village. The collected information was processed on SPSS. Two focus group discussions (FGD) were conducted in each village: one FGD with men (heads of households/peasant farms dealing in livestock-production), and the other with women. (social workers and housewives).

(2) Summary of farm survey and workshops/Focus Group Discussions results

The main economic activity of Mangistau Oblast villagers was livestock production (key activity, 100%) and hire-based employment (80%), mainly at oil enterprises (Figure 4.4). The highest hire-based employment level (95%) has been registered in Shair village of Mangistau rayon. One fourth of the surveyed respondents had crops cultivation.

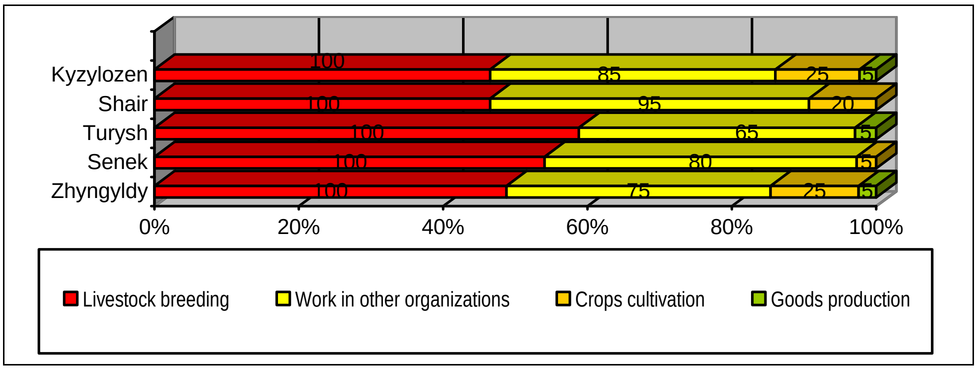


Figure 4.4 Types of Economic Activity

The villagers that had participated in focus groups largely rely on income from work at oil enterprises. Nevertheless, the income from livestock production activity was 40% of the total income, ranging from 56% at Tourysh village of Beyneu rayon and 28% in Jynghyldy village (28%) of Mangistau rayon (Figure 4.5).

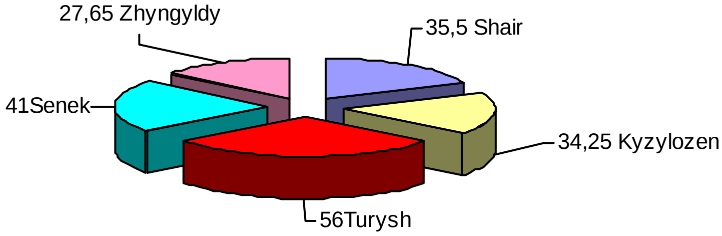


Figure 4.5 Income from Livestock Production

Annual income showed significant difference between villages. On average, annual income including profit from agricultural activity, wages of family members, pensions and work in other organizations of households was approximately KZT 1,244,000, ranging from KZT 979,905 in Kyzylozen village of Karakiyan rayon to KZT 1,793,370 in Jynghyldy village of Mangistau rayon (Table 4.1). The highest is 83% higher than the lowest (Table 4.2).

Table 4.1 Average Annual Income of Each Surveyed Settlement

Village	Annual income (KZT)	Average (of all the villages)
Jynghyldy	1,793,370	
Senek	1,079,975	
Shair	1,336,650	1,244,634
Kyzylozen	979,905	
Tourysh	1,033,270	

Table 4.2 Percentage of Income from different sources by farm type

Income	Household	Peasant farm
Livestock production	20	70
Work at extracting companies	45	20
Work in other organizations (state & agricultural)	35	15

Water supply

The main water supply problems of Mangistau Oblast were water scantiness and saltiness. On average 63% of the surveyed household/farm think water scantiness was problem, highest at Kyzylozen of Karakiyan rayon (93%) as shown in Figure 4.6. On average 35% of household/farms feeled water salinity was problem, the highest at Tourysh village of Beyneu rayon (63%). State support for digging wells particularly equipment for digging were requested at FGD.

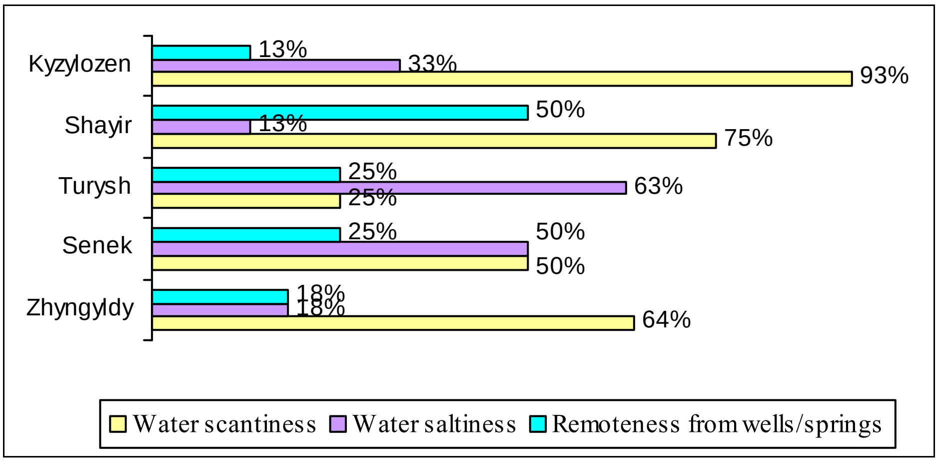


Figure 4.6 Water Supply Problems by Village

Road network

Road network is important for business as well as social welfare in the rural settlements. In majority of villages of Mangistau Oblast there were no asphalt roads. The available asphalt roads, as the surveyed showed, were not in good condition and need complete overhaul. The problem of roads was most urgent in Tourysh village of Beyneu rayon. The lack of public bus service was also suggested at FGD in Beyneu. Transport sick persons to hospital could be stuck with muddy roads for a several days.

Electrification

The power supply system was connected at majority of villages (83%). However, 17% of respondents (which are usually peasant farms situated outside the villages) were not connected with power supply.

Gas supply

Only 35% of the surveyed respondents were provided with centralized gas supply. Over a half of the respondents (65%) were not provided with centralized gas supply and are forced to prepare food on gas cylinders and manure.

70% of those who were not provided with centralized gas supply used imported gas cylinders and the others used animal manure. Those who do not have gas supply prepare food on manure (74%), gas cylinder (69%) and trees (5%).

Livestock production

Research results showed that residents of the surveyed villages keep sheep (100%), camels (90%) and horses (62%). Only 42% of the surveyed households keep animals. The main obstacle in animals keeping was the lack of good quality grass.

The majority of respondents (97%) were interested in increasing the sales volume of livestock products. However, most often they were not able to realize their interest because of the absence of possibilities to process and sell their products. Desires to sell milk, meat and wool with higher prices. The problems related to high prices of hay, disease control and transportation of animals to the market were suggested by the villagers.

Eighty-two percent of the surveyed respondents noted that there were no changes in livestock production (leather, wool) during the last 12 months. The livestock products were sold at markets in the nearest city or rayon center (56%), through bulk buyers (31%), local middlemen (5%), and by themselves at local market or to other villagers (4%). The most part of the respondents (67%) pasture their livestock by themselves without paid shepherds. Shepherds were more commonly used by peasant farms.

Livestock productivity

Most villagers sell animals as live animals (84%) and meat (55%) because of lack of transportation and freezers. The need to construct sausage and meat workshops was suggested at FGD.

Milk production

Thirty-five percent of the surveyed households were occupied with milk production. Causes of low involvement of the studied households in milk production and sale were revealed by focus groups.

Milk was only sold by peasant farms and households those who have a lot of livestock; most of produced milk was consumed by the family. Most households didn’t have the amount of milk that was enough for sale.

Milk was taken to markets or city shops or to rayon center or to an enterprise if there was any agreement.

Livestock health

Eighteen percent of the respondents faced serious diseases of livestock in the last 5 years. Frequent sickness of livestock in winter including foot-and-mouth disease and anthrax were reported from some farmers. Limitation to use the inoculation was reported to avoid the disease.

The high cost of inoculation, lack of veterinaries in the village, and high cost to go to veterinaries were reported.

Problems with sale of leather and wool

The sale of leather and wool remains the most serious problem in economic activity of the surveyed households. Leather and wool were simply thrown away because there is no place to sell it. The need for wool and leather processing facilities was suggested. In Senek leather and wool processing was started by Selhoznom Ltd. But they mostly process wool and leather of the livestock belonging to themselves not purchase from other farmers,

Conditions of pastures and forage

Only 14% of the surveyed respondents used seasonal pasture (dividing summer and winter pastures). Over a half of the surveyed respondents (53%) noted that the quality of pasturelands remained at the same level as 5 years ago, while 29% suggested deterioration, 18% improvement. In spite of the insufficient quality of pasturelands there were no attempts to improve the situation (91%).

Lack of water was pointed out as main problem at FGD. The possibility to dig out wells and the need for water pumps was suggested.

Most respondent (93%) purchased livestock forage (dry hay). High price of hay, KZT 250-300 for 20kg sock, was reported as a problem. The need for equipment to produce hay was suggested.

Crop cultivation

Only 14% of the surveyed farmers cultivated crops (tomato 100%, cucumber 46%, melon 47%, watermelon 4%, and cabbage 32%).

4.6 Conclusion and Recommendation

(1) Conclusion

According to the Governmental Program on Rural Development of Mangistau Oblast, all the rural settlements have medium potential for development. It implies availability of perspective of future development. The actions taken by the government in frameworks of Governmental Program on Rural Development in Mangistau Oblast aimed at support for basic living conditions of rural population. However, the study results showed that the aim remained unfulfilled. In order to properly implement the program, the feedback system in implementation of the rural areas development program needs to be developed. Participatory monitoring program with systematic information through surveys of population, meetings of rural communities etc on real situation in the villages, opinions and attitudes of population, needs to be developed.

In majority of regions of Kazakhstan the rural areas of Mangistau Oblast have a poorly developed road network. The asphalt-paved roads are built only to suburban villages. In most of other villages the roads are unpaved; and there are no roads at all around some other villages. It is likely that the problem of rural roads of Mangistau Oblast won't be solved in near future since the finances directed by the government are insufficient. The road network will not be properly developing in scarcely populated rayons with undeveloped economy. In addition to that, the transport strategy of Kazakhstan, regardless of the officially declared principles, gives the priority is given to the construction of highways that give the country revenues from transit of international trade.

Majority of villages of Mangistau Oblast face the deficit and poor quality water. The water supply system is deteriorated. There were revealed the facts when water purification facilities are not working at all for a long time. It is likely that water supply section of the Governmental Program on Rural Development have not been properly implemented to resolve this problem.

The majority of the villages of the Oblast do not have the problem with power supply. 35% of the surveyed settlements are connected to centralized gas supply. In other villages since the gas cylinders supply is very expensive villagers are forced to use traditional types of fuel such as *tizek* (pressed dung) and firewood.

Despite all the difficulties rural population of Mangistau Oblast are strongly attached to their land and traditional types of activity. The majority of respondents would like to deal in livestock production as a major type of activity: to increase the number of animals and to produce and sell livestock products. All the households/peasant farms in the surveyed villages have livestock. However, the survey results showed low productivity of livestock. On average the profit from livestock activity is only one third of the family budget in the households and 70% of the profit of families owning peasant farms. The rest part of the income is comprised of wages of state employees, pensions and earnings at oil fields.

In the surveyed households/peasant farms the increase of number of animals takes place during last years. The majority of the surveyed households/peasant farms sell live animals. The meat is sold by approximately a half of the household/peasant farms, mainly at local markets and in small quantities. Leather and wool are thrown away by the majority of households/peasant farms. The camel milk is mostly consumed at home and is sold in small quantities only by 35% of households/peasant farms.

Residents of the surveyed villages are aware that the situation can be changed through construction of the storage, butchering facilities, refrigerators, and local wool and leather processing workshops. However, they rely on the state support when it comes to such desires of villagers. They expressed no initiative in creation of marketing associations, or associations managing product quality improvement. The support for such purchase/construction is not planned by the Governmental Program on Rural Development in Mangistau Oblast. In order to justify the investment on the development of livestock industries, the farm outputs need to be competitive against local manufactures that use raw materials of better quality delivered from other regions of Kazakhstan and from abroad. In order to support these farms in market economy, the program for the development of socio-entrepreneurship corporations can be implemented.

According to evaluations of local inhabitants, there were no improvements in the technologies of livestock production, (e.g. animal breeding, pasture management). Livestock health may have more serious problem in the future. Even though 82% of the surveyed households/peasant farms didn’t have serious diseases of livestock in the last few years, however, it is likely that the animals began to get sick more often and the veterinary services become more expensive and less available.

Education system in villages of Mangistau Oblast mainly conforms to the standards of rural Kazakhstan. No illiteracy takes place except for small population in Beineu. School age children have access to secondary education. The surveyed villagers expressed desire with regards to a broader development of various forms of professional education.

Healthcare management in the surveyed villages causes serious resentment of local residents. Hospital and medical aid posts are located in building inapplicable for such purposes, equipment is obsolete, and there is a shortage of medical personnel.

In the rural territories of Mangistau Oblast under unfavorable climate conditions for agricultural production, it is difficult for a large modern, highly productive and competitive agrarian sector to be developed. However, 14% of the villagers cultivate crop in the territories.

Agriculture cannot provide villagers of Mangistau Oblast, especially women and youth, with appropriate amount of jobs. However, in many villages the employment problem has been managed by means of petroleum production companies. Domestic and foreign oil production companies can be stimulated using economic benefits and principles of social responsibility to train the workers out of the local rural population.

In seaside rayons of Mangistau Oblast the potential of fishery is poorly used. Local inhabitants believe that in their villages the fishing farms may be set up. However, for this the initial state support is needed. But, according to local people, the government doesn't render such assistance as considers the investments into the fishery risky. A special program on development of fishery and fish processing in seaside settlements can be developed.

(2) Recommendation and policy implication on the frameworks of Governmental Program on Rural Development

For the rural development strategy of Mangistau Oblast, more differentiated approach can be taken. For differentiation it is necessary to classify rural settlements by the following groups:

A) Settlements with development potential of organic for this region competitive manufactures (astrakhan fur processing, camel milk production (*shubat*), fishery and fish processing etc.);

B) Settlements with development potential related to supply of oil-fields and industrial objects with work force and maintenance;

C) Settlements with relatively (for Mangistau Oblast) favorable conditions for traditional types of farming;

D) Settlements with no economic perspective

In settlements of group A, enterprises with elaborated production and logistic structure that would become a basis for socio-economic development of a settlement can be set up and develop.

In settlements of group B, along with work force supply for oil fields, enterprises of trade and service that could get oil industries interested can be developed. In future to transform these villages into "servicing villages" that would be a part of the infrastructure of oil-production and other industrial enterprises.

For settlements of group C to think over the differentiated state support – from target credits to direct state donations. Concentrate on the development of local commodity turnover. In this respect to stimulate peasants to establish associations for increase of technical and marketing level of local trade. To develop decorative homemade folk crafts. To create new work places to organize in these settlements institutions of primary and secondary professional agricultural education that would have rayon significance. For group D Settlements, villagers may have an option to move to other villages with more economic potential.

Such villages as Beyneu, Burankul, and Sarga of Beyneu rayon; Kuryk and Senek villages of Karakiyan rayon, Taushyk village of Tupkaragan rayon, Shetpe of Mangistau rayon have some good development perspectives thanks to nearness to urban areas, relatively developed infrastructure, or, for instance, creation of advanced astrakhan fur processing facility in Senek village. Attempts to raise the economy of such villages as Turysh village in Beineu rayon, Tigen, Sazdy and Kiyakty villages in Mangistau rayon, and Tulep and Kyzylsou villages of Karakiyan rayon are unlikely to be effective.

The specific requests presented at focus group discussion by local population include: 1) to implement a special program on water obtaining from the underground wells; 2) to assist local inhabitants in establishing the associations for livestock products sales; 3) to open in Aktau a meat market with preferential terms for peasants selling their products without middlemen; and 4) to conduct at least once a year special campaigns of free of charge vaccinations for animals.

CHAPTER 5 TRAFFIC SURVEY

5.1 Objectives

In order to examine the present conditions of traffic on major roads, a traffic survey was conducted. The survey focused on the following three aspects:

1) Number of passenger cars, buses and lorries go through main roads,
2) Spatial and temporal distribution of the types of vehicles, passenger cars and lorries, and
3) Perception of drivers and passengers on the road and traffic conditions.

5.2 Definition of Car Trips

In order to evaluate the financial performance of the urban road network improvement project and to forecast the urban road transport demand, the study focused on inter-zone traffic movement of vehicle transport excluding intra-zone traffic movement (Figure 5.1).

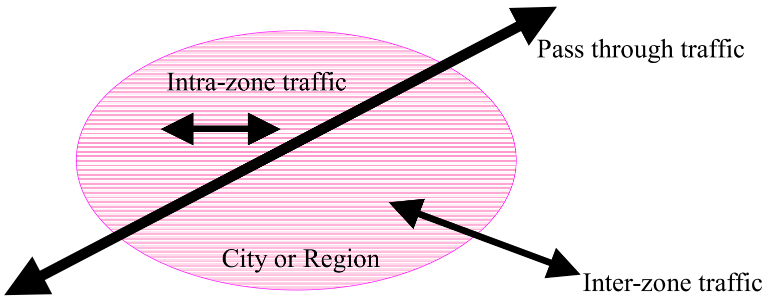


Figure 5.1 Target Traffic Movements

5.3 Methods

(1) Surveyed items

The following surveys were conducted:

1) Counting the traffic volume on major road section and intersection and number of vehicles by type and by directions

2) Observation of the number of passenger in a car in order to estimate the occupancy ratio of passenger and loads.

3) Hearing from the drivers and passengers
Questionnaire survey of the drivers (origin / destination, freight volume, etc)

(2) Survey date

These three survey were carried out between September 4 to 22, 2007.

(3) Vehicle classification

The vehicle classification was defined as shown in Table 5.1.

Table 5.1 Vehicle Classification

Categories		Remarks
Passenger vehicles	Passenger car	Passenger car, taxi, etc.
	Bus	Small bus, large bus
Lorry vehicles	Small truck	Pickup truck (under capacity of 4t)
	Large truck	Lorry, dump truck, trailer, lorry without trailer

(4) Methodology of each survey

1) Count of the transport on major road section and intersection

At the major section and intersection, the traffic volume of 14 or 24 hours was surveyed. The two directions of the traffic volume were counted by at section and by all directions at intersection with 1-hour interval.

2) Study passenger volume of public transport

The number of passengers in a car and a bus including a driver was counted by observation from an observation point. The boarding rate (100%, 75%, 50%, 25%, 0%) was estimated on site for bus passenger and the passenger volume was calculated with multiplying by the capacity of the bus.

3) Hearing of the drivers and passenger

A roadside survey for drivers/passengers was conducted at five locations on major roads as shown in Figure 5.2. The Survey was carried out for 14 hours (6:00-20:00) on weekdays. The passing vehicles were stopped with assistance of policemen and interviewed by the surveyors based on the prepared questionnaire. The contents of the questionnaire include: origin and destination, objective and freight items in case of lorry vehicle.

Prior to the Survey, the OD zones were prepared based on the administrative areas of Mangistau Oblast in order that the drivers are able to answer the locations. Neighbor Oblasts and countries were included in the list of zones.

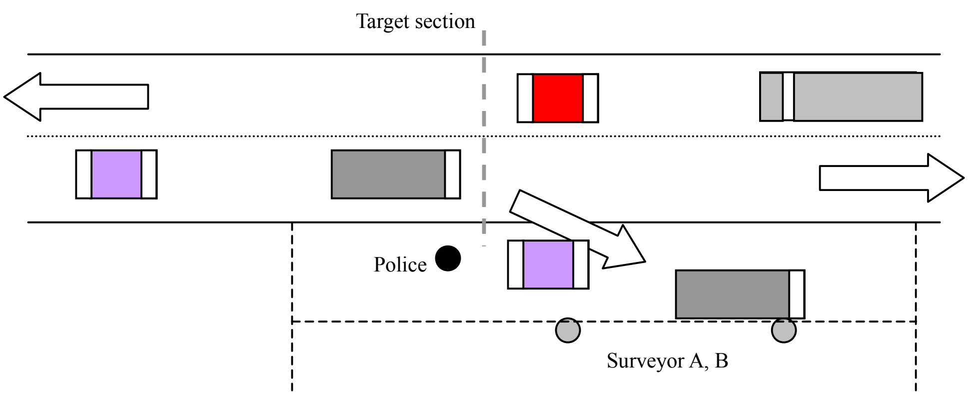


Figure 5.2 Method of Interview Survey

(5) Zoning

The zone is divided into the following 16 areas, 13 zones in Mangistau Oblast and three zones outside of Mangistau Oblast based on the existing road network (Tables 5.2 and 5.3).

Table 5.2 Zones in Mangistau Oblast

Code	Region	Code	Region
1	City Aktau	2	City Zhanaozen
3	Beinau	4	Oporny
5	Shetpe	6	Sayutes
7	Tauchik	8	Kuryk
9	Zhetybai	10	Fort shevchenko
11	Karazanvas	12	Aktau Port
13	Aktau Airport		

Table 5.3 Zones Outside Mangistau Oblast

Code	Region	Code	Region
14	To Atyrau	15	To Uzbekistan
16	To Turkmenstan		

(6) Location

There were 16 survey points as shown in Figure 5.3.

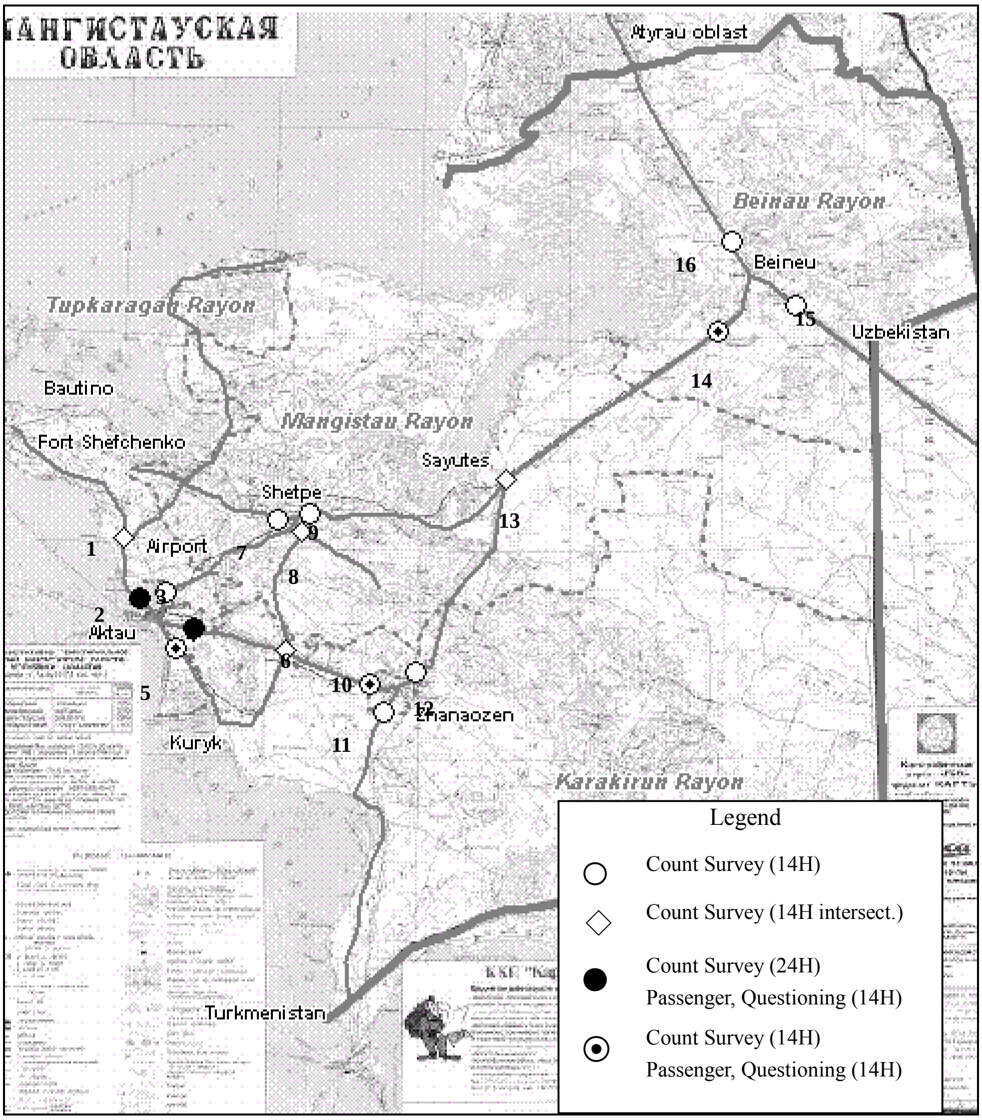


Figure 5.3 Survey Points

5.4 Results of Traffic Survey

(1) Traffic volume

The traffic volume of each road section by all modes is shown in Figure 5.4. The largest volume is observed at the section Aktau to Shetpe. The traffic volume (converted to 24 hours) of both directions was calculated at approximately 5,000 vehicles/24hrs. The main traffic flows were observed in the section of; Aktau-Bautino 2014 vehicles, Aktau-Zhenaozen 3,816 vehicles, and AKtau-Kuryk 2,301 vehicles. In other sections, the volume did not reach 1,000 vehicles per 24 hours.

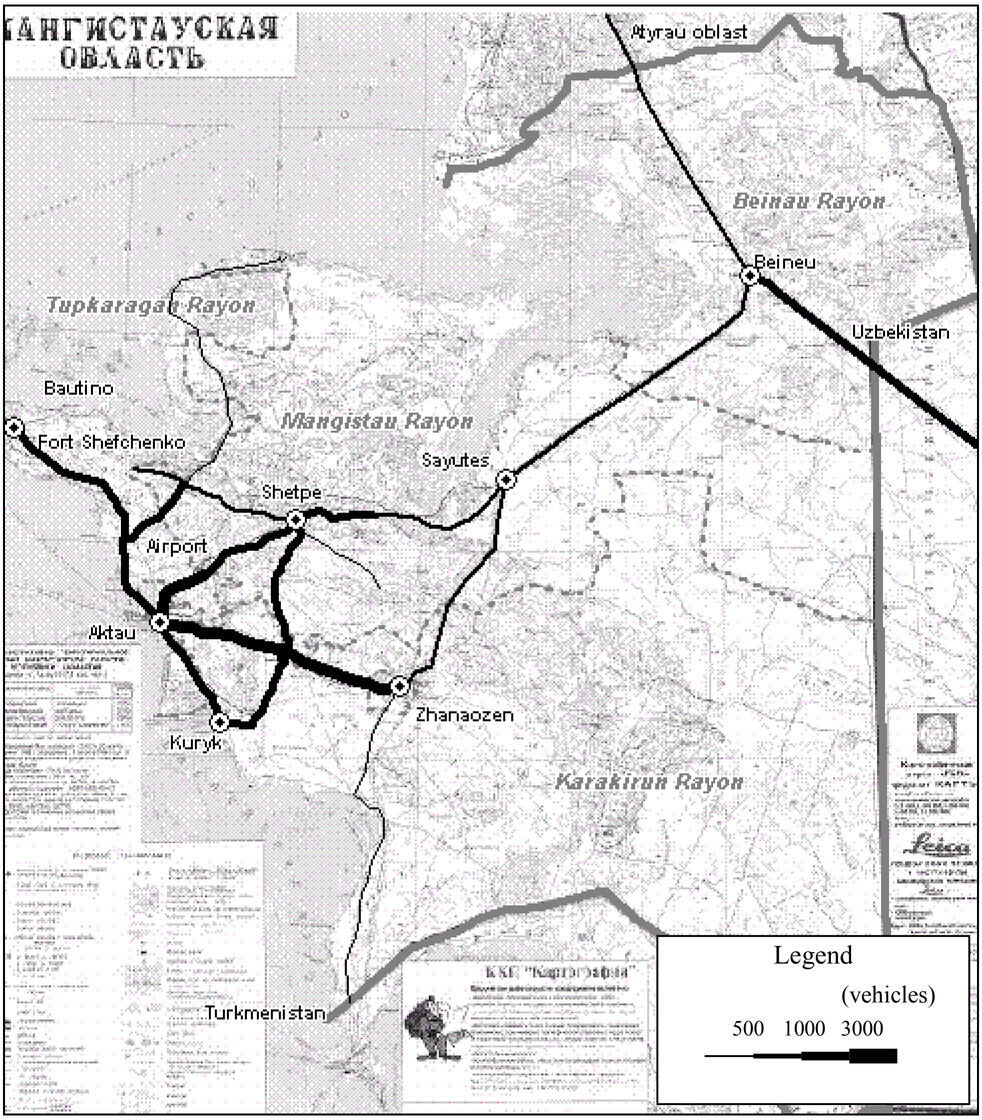


Figure 5.4 All Mode 24-hour Traffic Volume

(2) Mode share (heavy traffic ratio)

Figure 5.5 shows the mode share characteristics of each section. The composition of vehicles for all the sections was 64% passenger cars, 16% buses and 24% lorry vehicles. In the paved section connected between Aktau and the other rayon centers, the percentage of passenger vehicles accounted for more than 70%. While the section near Fort Shevchenko, Karajanvas, Seyutes, and Uzbekistan-Beineu-Atyrau area tended to have the higher modal share of freight vehicles exceeding 30%.

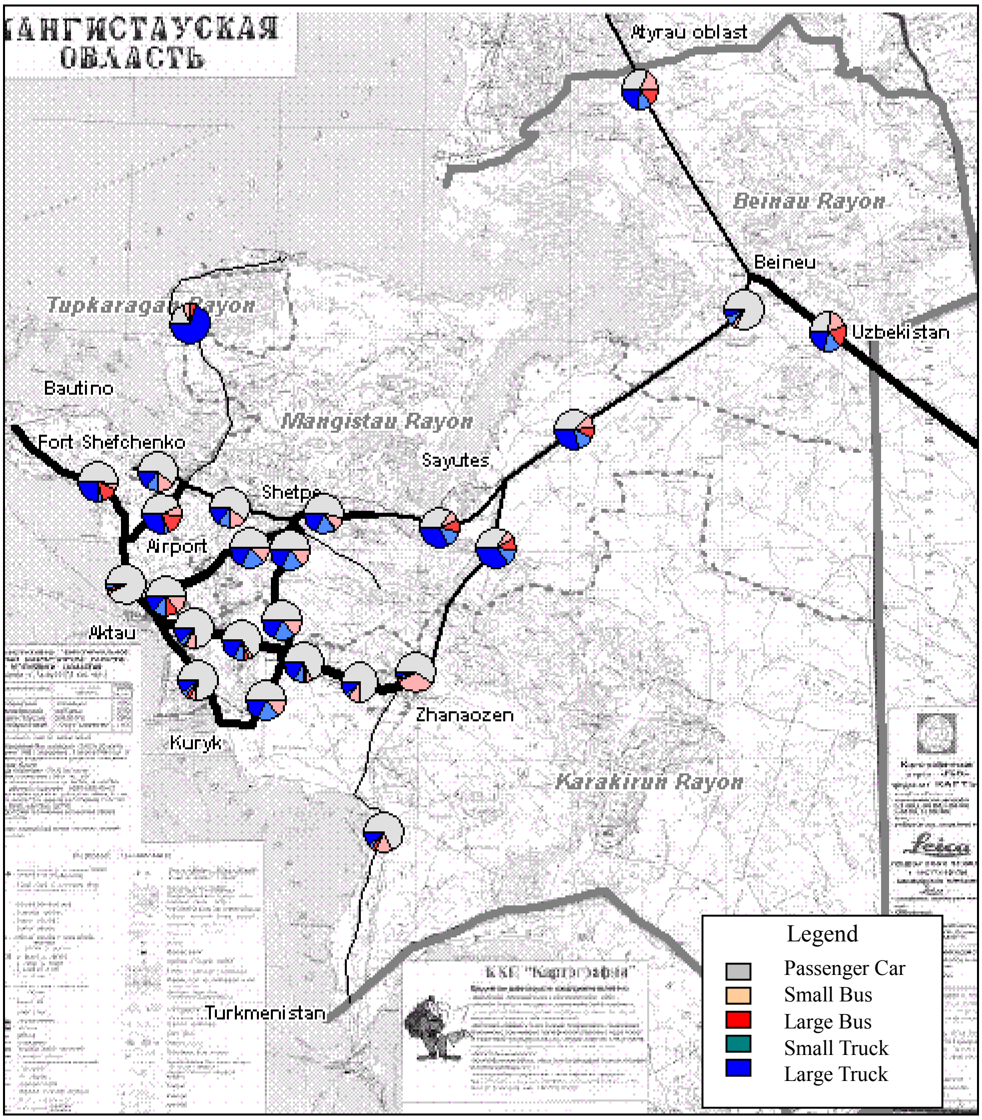


Figure 5.5 Composition of Vehicles on Major Roads

(3) Ratio of dairy to daytime and difference of weekday and weekend

The data for 14-hour surveys were converted to 24 hour (Average Daily Traffic (ADT)) in order to estimate the existing traffic movement. The factors for converting 14 hour counts into 24 hour counts is available from this survey, as shown in Table 5.4. The conversion factor from 14-hour to 24-hour counts is 1.33 in weekday and 1.25 in weekend on average.

Table 5.4 Traffic Counts Conversion from 14-hour to 24-hour

Time zone	Weekday			Weekend		
	Point-2	Point-4	Total	Point-2	Point-4	Total
06:00-20:00	1,465	2,926	4,391	1,058	1,800	2,858
20:00-06:00	549	890	1,439	171	549	720
Total (all day)	2,014	3,816	5,830	1,229	2,349	3,578
Ratio of daily to daytime	1.37	1.30	1.33	1.16	1.31	1.25

The traffic volume on weekend is approximately 60-70 percent of the traffic of a weekday (Table 5.5). The truck volume is about a half of a weekday. However, in the section between Aktau and Zhanaozen, the traffic volume on weekend is the same level as weekday.

Table 5.5 Differences in Traffic Volume between Weekdays and Weekends

Category	Location	Vehicle classification			
		Passenger car	Bus	Truck	Total
Weekday	Point-2	1,823	115	76	2,014
	Point-4	2,764	401	651	3,816
	Point-10	1,972	289	458	2,719
	Total	6,559	805	1,185	8,549
Weekend	Point-2	1,115	73	41	1,229
	Point-4	1,767	224	358	2,349
	Point-10	2,075	300	277	2,652
	Total	4,957	597	676	6,230
Weekend/weekday	Point-2	0.61	0.63	0.54	0.61
	Point-4	0.64	0.56	0.55	0.62
	Point-10	1.05	1.04	0.60	0.98
	Total	0.76	0.74	0.57	0.73

Notes: Point 2 & 4=24-hour survey; Point 10=14-hours survey

(4) Passenger occupancy

The passenger occupancy at the main points is shown in Table 5.6. The average occupancy of passenger car was 2.9, which was more efficient than other developed countries. The results showed that the occupancy rate is higher in the suburb area than around Aktau.

On the other hand, the average passenger occupancy of bus is 11 for small bus bounds for Zhanaozen and 15 for large bus bounds for Fort Shevchenko, Kuryk and Setpe. The average occupancy rate is approximately 60% for these vehicle types (Figure 5.6), suggesting that the bus operation is efficient. The time zone analysis demonstrated four peak-hour times in a day: early morning, around 10 am, noon and evening.

Table 5.6 Average Passenger Occupancy Rates on Buses

(# of persons/vehicle)

Area	Passenger car	Small bus	Large bus
Aktau-Zhanaozen (near Aktau)	3.6	14 (93%)	-
Aktau-Zhanaozen (near Zhanaozen)	3.1	8 (53%)	-
Aktau-Fort Schevchenko	2.4	-	12 (40%)
Aktau-Kuryk	3.2	-	24 (80%)
Aktau-Shetpe	2.1	-	12 (40%)
Average	2.9	9 (60%)	18 (60%)

Capacity: Passenger car=5; Small bus=18; Large bus=30 (determined by hearing)
(n%) = occupancy rate

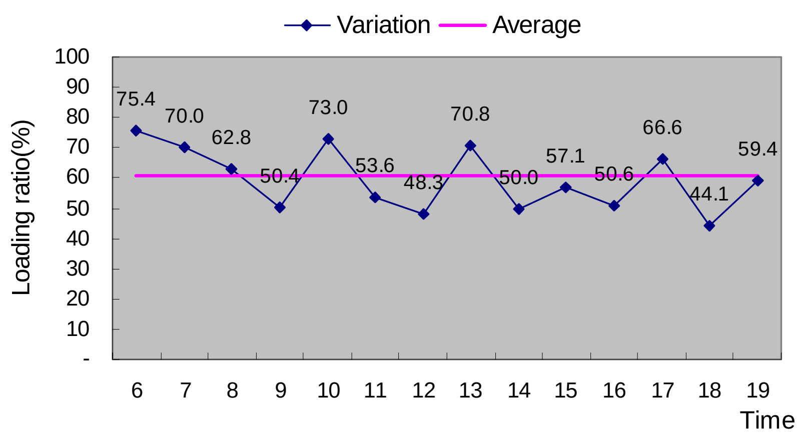


Figure 5.6 Occupancy Rates on Buses by Time Zone

(5) Truck loading

Loading ratio of small truck and large truck is shown in Table 5.7. The loading of large truck is especially high (80%).

Table 5.7 Cargo Loading Ratio

Classification	Small truck*	Large truck
Loading ratio	40%	90%

* <4t

(6) Origin and destination information of vehicles

The OD table between inter zone was created according to the zone defined previously. The procedure of formulating of OD table is shown in Figure 5.7. The OD table is created from the sample by roadside hearing survey, and the total traffic volume at survey points for each Origin-Destination type.

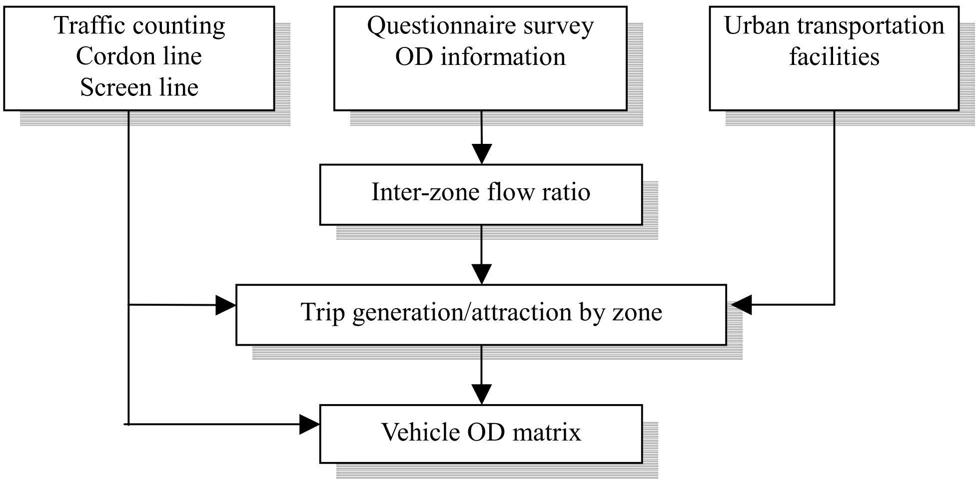


Figure 5.7 Present OD Matrix Development Procedure

The car OD table and picture are shown in Table 5.8 and Figure 5.8. The volume from/to Aktau reached approximately 30 percent of the total traffic valume, and the relatively high volumes were found from/to Zhanaozen (13%), Zhatybai (13%), and Shetpe (7%). There was heavy traffic between these zones, especially from/to Aktau. Almost all traffic from outside of Mangistau Oblast had Aktau as a final destination.

Table 5.8 Estimated Present OD Table (Inter-zone)

Zone	Aktau City	Zhanaozen City	Beinau	Oporny	Shetpe	Sayutes	Tauchik	Kuryk	Zhetybai	Fort Shefchenko	Karazanvas	Aktau Port	Airport	North Oblast	Uzbekistan	Turkmenista	Total
Aktau City	0	917	301	128	443	314	301	306	467	257	100	145	231	282	179	113	4484
Zhanaozen City	917	0	81	36	119	85	81	83	125	70	28	40	63	76	49	31	1884
Beinau	301	81	0	10	38	27	26	26	40	22	8	11	19	24	15	10	658
Oporny	128	36	10	0	16	11	10	11	16	9	2	4	7	10	6	4	280
Shetpe	443	119	38	16	0	40	38	39	60	33	13	18	29	36	22	15	959
Sayutes	314	85	27	11	40	0	27	27	42	22	8	13	20	24	15	10	685
Tauchik	301	81	26	10	38	27	0	26	41	22	8	12	20	24	15	10	661
Kuryk	306	83	26	11	39	27	26	0	41	22	8	13	20	24	15	10	671
Zhetybai	467	125	40	16	60	42	41	41	0	35	13	19	30	38	23	15	1005
Fort Shefchenko	257	70	22	9	33	22	22	22	35	0	8	11	17	20	13	7	568
Karazanvas	100	28	8	2	13	8	8	8	13	8	0	3	6	7	5	2	219
Aktau Port	145	40	11	4	18	13	12	13	19	11	3	0	9	10	7	4	319
Airport	231	63	19	7	29	20	20	20	30	17	6	9	0	18	11	7	507
North Oblast	282	76	24	10	36	24	24	24	38	20	7	10	18	0	13	8	614
Uzbekistan	179	49	15	6	22	15	15	15	23	13	5	7	11	13	0	5	393
Turkmenista	113	31	10	4	15	10	10	10	15	7	2	4	7	8	5	0	251
Total	4484	1884	658	280	959	685	661	671	1005	568	219	319	507	614	393	251	14158

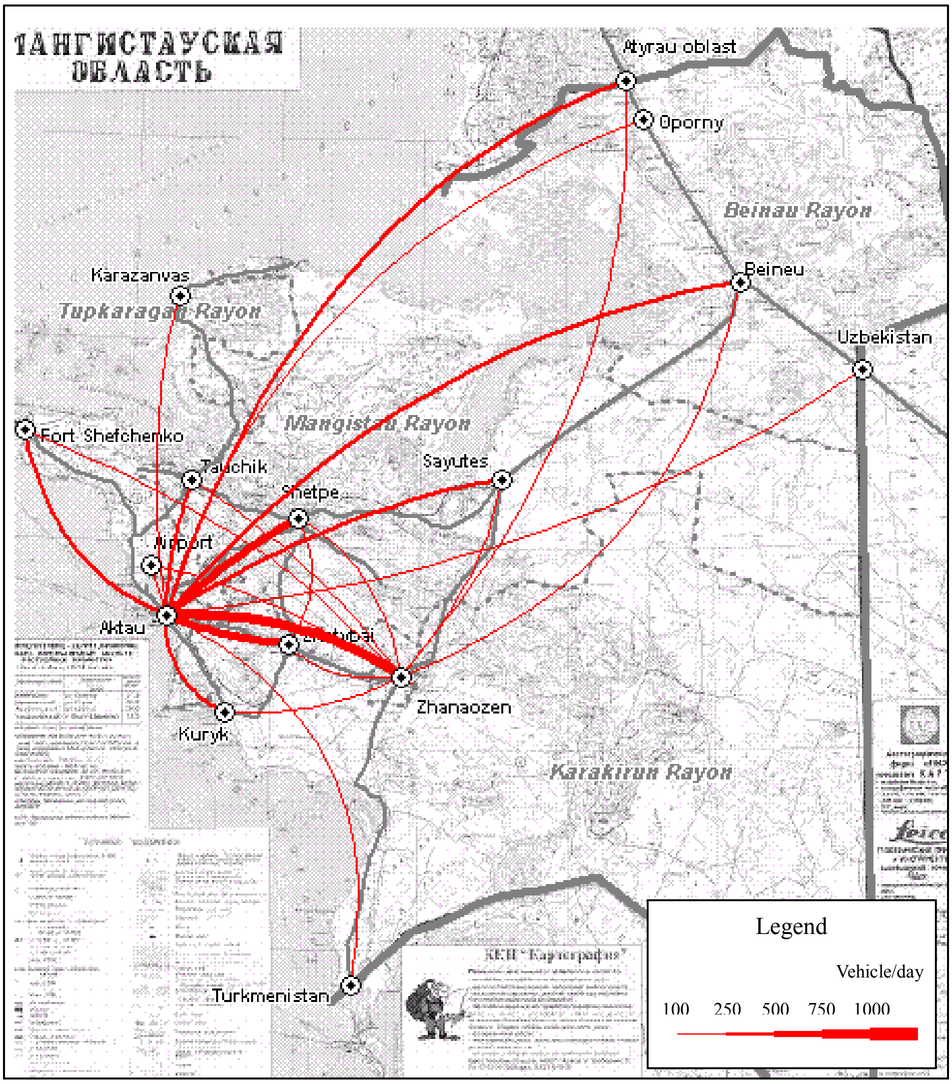


Figure 5.8 Estimated OD Flow at Present

(7) Drivers' opinions

The problem of road conditions reported by drivers is shown in Table 5.9. The poor road conditions were reported by 40% of drivers. The results suggested that many road users considered the problem of road safety related to over speed and long transportation time to be caused by poor road conditions. It suggests that the road network is poor and long travel time is caused by detours. Especially, a majority of truck users complained about long travel time. The potential of Mangistau Oblast is not fully utilized and the problem of travel time caused by the poor road conditions and network is serious.

Table 5.9 Summary of Driver's Opinions

Problems	Passenger car	Bus	Truck	All mode
Pavement	43.3	36.3	45.2	41.5
Road network	1.5	5.8	2.1	2.6
Safety	22.9	22.6	13.1	22.3
Many time	13.0	9.5	23.0	12.6
Bus security	7.6	6.4	8.8	7.3
Snow obstructs	1.1	3.8	0.0	1.8
Rest facilities	8.0	8.2	2.1	7.8
Others	2.6	7.4	5.7	4.1
Total (%)	100.0	100.0	100.0	100.0