

モンゴル国工業開発計画調査  
簡易企業診断結果報告書

[ 2 4 ]

セクター：加工製品産業

企業名：Zet Trading Co.,Ltd.

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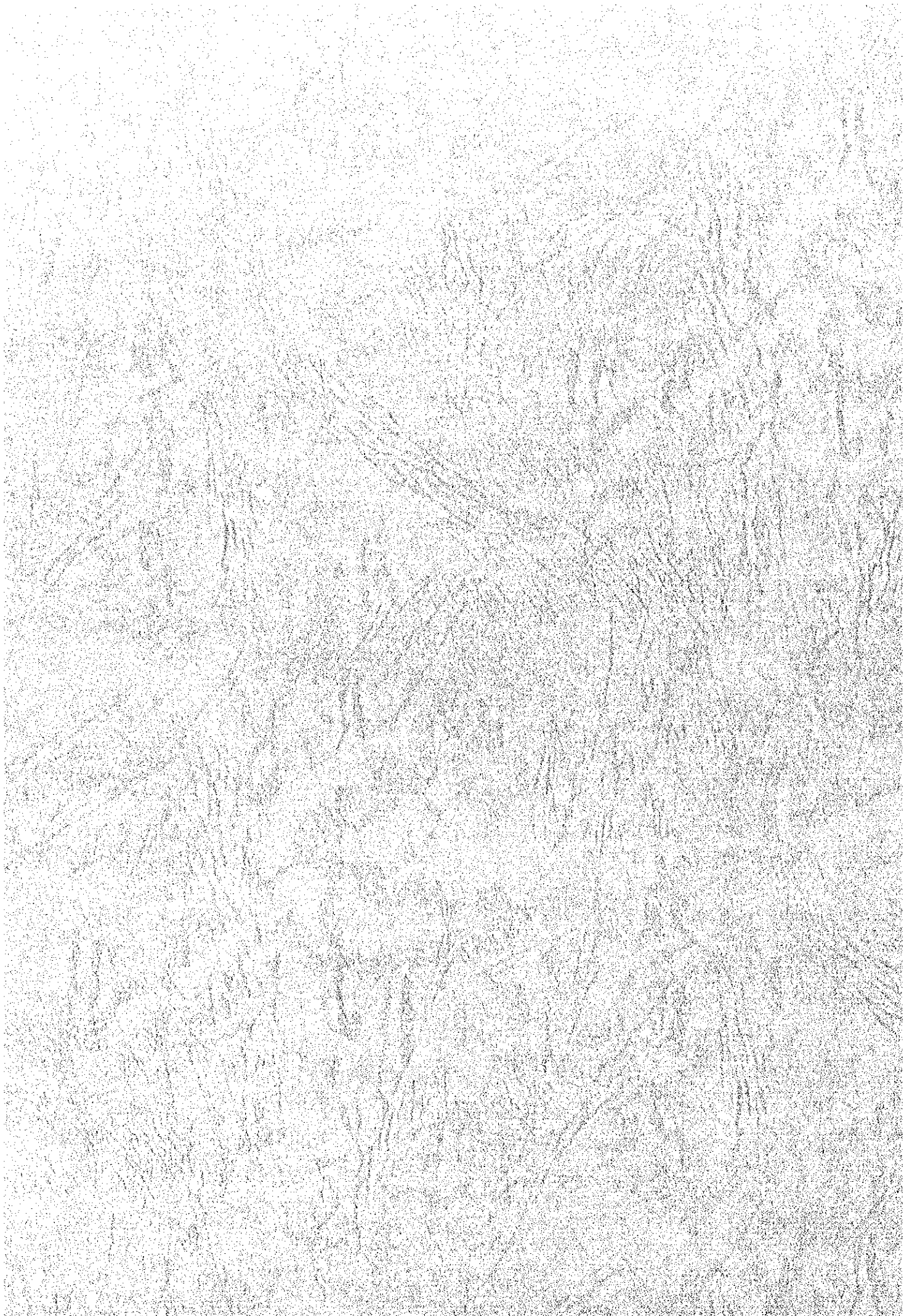
J1148640(4)

1999年1月

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# 企業診断報告書

Zet Trading Co.,Ltd.

## 1. 訪問月日

第1次 1998年8月18日 加藤・佐藤

第2次 1998年10月14日 加藤・佐藤

相手方面談者 (President) R. ZORIGT 氏  
(Financial Deputy Director) G. BATDORJ 氏

## 2. 企業概要

ウランバートル市内にあり、交通の便は良い。1974年に操業を開始した国営工場を1994年に買収して生産を開始した。

機械設備は旧態依然としており現有機械の15%程度しか稼働していない。さらに資金不足もあって、不要機械が作業場内に放置されたままで、作業にも差し障りがある。冷凍機や冷蔵庫も不完全であり故障がちなために、乳製品に必要な冷蔵設備が不十分である。

ウランバートル近郊に二個所の牧場(ボルとバル)を保有し、乳牛約400頭飼育している。原料牛乳はこの牧場からタンクローリーで搬入している。

製品はモンゴルでは唯一の乳幼児用低脂肪ミルクをメインに、他にアイスクリーム、ヨーグルト、タルク(乾燥固形物)、チーズなど乳加工品を製造している。

## 3. 経営の現況

添付の企業訪問調査表に示す。

## 4. 生産

### 4-1 生産の現状

工場内は上記のような状況下にある。工場内は外部との遮断が不完全で(開放のままの窓もある)ハエなどの小昆虫が飛来している。通路に製品や半製品が並べられ、容器の蓋が完全ではないものもあり、不衛生な保管状態である。

1997年は保健所の抜き打ち検査で微生物数が多いことを指摘され、対策のため一時工場を停止した。

乳製品の他に、小麦、野菜の栽培も行っている。



1148640 [4]

### Company Survey Sheet

Sequential No	11	Date of survey:	Aug. 18 , 1998	Name of survey personnel	H.Kato M.Sato
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Item	Surveyed content																																				
1	Name of company ZETTRADING CO., LTD.																																				
2	Address Bayanzurkh duureg,Ulaanbataar-49/525																																				
3	Telephone/fax: TEL: 976-1-362234      F AX: 976-1-323171																																				
4	Established/Commence of operations: Founded in 1992. Purchased the plant from the government in 1994.																																				
5	Capitalized at: 335 Mil.Tg																																				
6	Persons responsible for management: President: R.ZORIGT Person in charge of production:																																				
7	Situation regarding shareholders: Private share holders : R.Zorigt    100%																																				
8	Number of employees Total number: 140 Number of engineers: 28																																				
9	Building plot/building: Plot area: 8,471 m <sup>2</sup> Built area: 4,950 m <sup>2</sup>																																				
10	Turnover ( '97 )    Mil.Tg 576 Mil..Tg.																																				
11	Product Sales structure Milk 10.3%,    Yogurt 9.8%,    Ice cream 3.7% Feed stuff 43.1%,    Others 33.1%																																				
12	Customers (percentage of exports and countries exported to) Domestic market 100% Dairy products / Direct stores 90%, Others 10%																																				
13	Amount of purchases('97) Main Material(Dairy :products) Milk, Dry milk, Sub material    Sugar, roce,																																				
14	Purchased Source ('97) Ratio: Purchased from abroad/Total by country Main Material: The company's pasture,																																				
15	Main equipment <table style="width: 100%; border: none;"> <tr><td>1)Milk pan /300Lt</td><td>1 unit</td><td>1983</td><td>Russia</td></tr> <tr><td>2)Milk pan/600Lt.</td><td>1unit</td><td>1980</td><td>Russia</td></tr> <tr><td>3)Milk pan/1000Lt</td><td>2units</td><td>1997</td><td>Russia</td></tr> <tr><td>4)Milk bottler</td><td>4units</td><td>1975</td><td>Russia</td></tr> <tr><td>5)Butter separator/120Lt.</td><td>1unit</td><td>1982</td><td>Russia</td></tr> <tr><td>6)Ice cream freezer</td><td>3units</td><td>1989</td><td>China</td></tr> <tr><td>7)Freezer</td><td>1unit</td><td>1989</td><td>China</td></tr> <tr><td>8)Freezer</td><td>1unit</td><td>1998</td><td>China</td></tr> <tr><td>9)Soft drink equipment</td><td>1unit</td><td>1997</td><td>Mongolia</td></tr> </table>	1)Milk pan /300Lt	1 unit	1983	Russia	2)Milk pan/600Lt.	1unit	1980	Russia	3)Milk pan/1000Lt	2units	1997	Russia	4)Milk bottler	4units	1975	Russia	5)Butter separator/120Lt.	1unit	1982	Russia	6)Ice cream freezer	3units	1989	China	7)Freezer	1unit	1989	China	8)Freezer	1unit	1998	China	9)Soft drink equipment	1unit	1997	Mongolia
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8)Freezer	1unit	1998	China																																		
9)Soft drink equipment	1unit	1997	Mongolia																																		
16	Production footing 1 Shift																																				
17	The average wages 34,600 Tg/M																																				

18	Problems/main items that need to be improved.	1) Machinery is superannuated. 2) Fund is short. 3) Raw material cost is increasing. 4) Due to frequent power failure, the production activities would stop sometimes. 5) Technological level is low. 6) Lack of new product. 7) Lack of facilities for technical skill improvement. 8)
19	Fund requirement	Working fund : 32.8Mil.Tg. Purchase for milk bottle  Investment fund : 623.2mil.Tg Milk bottling machine    360.8Mil.Tg Yogurt bottling machine  131.2Mil.tg Cream bottling machine    82Mil.Tg Ice cream Freezer         30 Mil.Tg Others                       19.2Mil.Tg

#### 4-2 問題と要改善点

生産実態面の診断結果を「企業診断評価と問題点」に示す。

- 長所
- 1) 自社牧場を保有し、原料乳は確保されている。
  - 2) 多角的経営を図っている。
  - 3) ウランバートル市内にあり、集乳や製品運送に便利である。
- 短所
- 1) 工場内衛生的管理が不十分である。
  - 2) 乳幼児向けの製品を製造するという意識が不足している。
  - 3) 工場内の機械設備のレイアウトが悪い。
- 問題点
- 1) 稼働していない機械が放置されたままで作業の邪魔である
  - 2) 製品の分析、測定が他の検査機関任せである

#### 4-3 技術指導内容

製造、品質管理、食品衛生上から、次のような点について技術指導を行った。

#### 4-4 改善目標、改善活動に関する提言、勧告

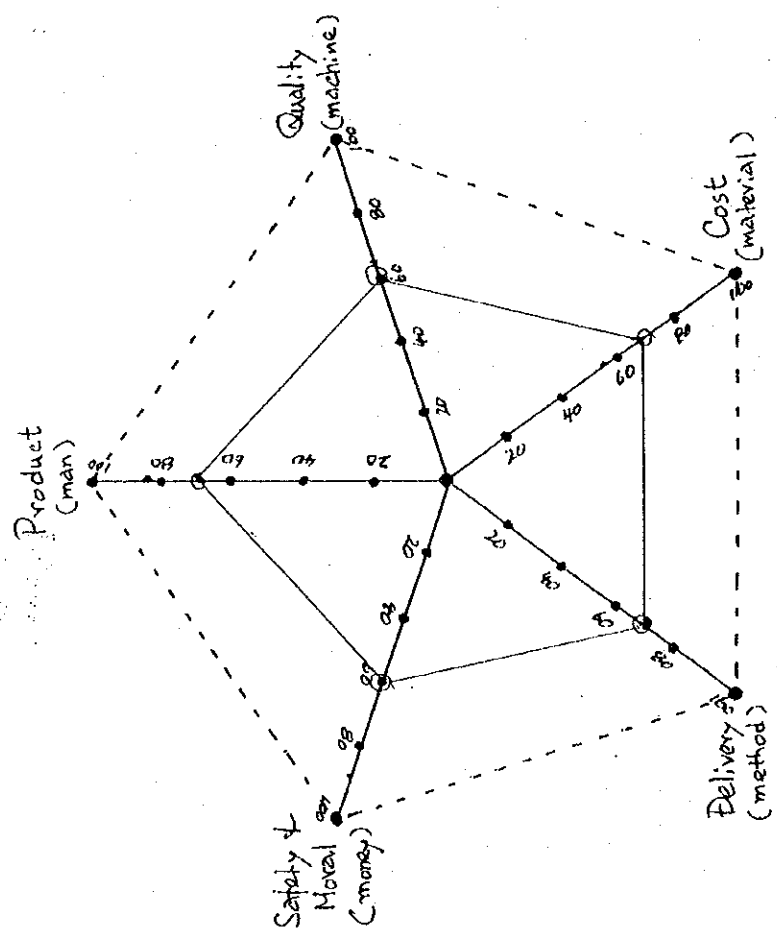
製造、品質管理、食品衛生面について次のような技術指導を行った。

- 1) 製品、半製品などを冷蔵庫に保管する。通路など人の通り道には置かない。
- 2) 保健所の指導で室内換気のため窓を開けるよういわれたというが、網戸にして、昆虫類の侵入を防止すべきである。
- 3) 製品の自主検査に努めること。検査すべき項目を定め、自社検査基準を作成して、実施すべきである。
- 4) 少なくとも乳幼児用食品を製造しているという意識を高める。
- 5) 夏場の牛乳返品率が5~10%と高すぎるので、出来るだけ冷蔵輸送、貯蔵を心がける。

Zet Trading

企業診断評価の課題点

評価区分 {
   
 81~100点: 優良
   
 61~80点: 良
   
 51~60点: 可能性はある



IN-PUT OUT-PUT 別評価.

要素別評価.



## 5. 販売

### 5-1 販売の現状

下表に 1995～1997 年の生産量と売上高を示す。

	1995	1996	1997
ミルク	456	359	299
ヨーグルト	234	242	227
クリーム	2,100	3,480	4,045
エーラム	358	342	309
アールツ	920	1,000	930
アイスクリーム	11,690	30,900	147,840

	1995	1996	1997
ミルク	54,746	53,900	59,806
ヨーグルト	35,049	48,374	56,680
クリーム	1,680	2,900	6,067
エーラム	358	342	309
アールツ	91	100	92
アイスクリーム	1,169	3,090	14,784
その他	604	545	
合計	93,696	109,250	137,739

ウランバートルのミルクは国営の SUU 社、民営の Zet Trading 社、小規模の GUM 社が殺菌ミルクを供給している以外は、大部分農民による生ミルクの直接販売である。

Zet Trading 社は殺菌ミルクの略 30% のシェアを有する。

Zet Trade 社は、モンゴルにおける子供の栄養改善を目的に幼児向け低脂肪乳の生産を中心に事業展開を計画している。

原料乳は、自社牧場か調達するために、現在、量的には問題ない。

製品販売は 90% が自社直営店による販売であり、代金回収は問題ない。

しかし、旧国営工場の旧式、老朽設備を買収稼働させているために、品質、衛生管理ともに改善を要する。

### 5-2 販売の提言

集乳から、製造、出荷まで衛生管理を改善する必要がある。

特に、販売店の冷蔵庫を製備し、貯蔵期間の延長を図る必要がある。これにより、

夏場の返品減少をはかる。

特に、工場だけではなく、運送、小売り等流通面の食品衛生管理の向上が必要である。

## 6 財務・経理

### 6-1 財務、経理の現状と提言

財務、経理システムは基本的には国際経理基準により作成されている。

次ページに税務署提出の、1997、1998 年第 2 四半期 財務諸表、並びにそれに基づく財務指標を示す。(1998 年第 2 四半期の財務指標算出に当たって、売上、利益は 1～6 月の実績を 2 倍して年間と仮定した)

設備が旧式であり、今後何をするにしても投資が必要であるが、現状ではいずれの指標も優良である。特に流動負債が極端に少ない。

資産再評価も 96 年 4 月に実施している。

製品が消費者へ直売であり、売上回収に問題がない。

Zorigt 社長は、別に商社事業も行っており、Zet Trade 社はそれと独立した関係を確立する必要がある。

現在の財務体質は優良であるが、今後、設備更新と、流通整備の投資をどのように調達するかが問題である。

## 7. 投資計画

### 7-1 投資の概要

現在の生産を下表のように新製品（欧風パン、菓子、ピザ）を含め生産増強を計画する。

詳細は、巻末「PROJECT MESURES TO ENCHANCE THE PRODUCTION OF BABY FOOD AND DAIRY PRODUCTS “ZET TRADE” CO., LTD.」を参照のこと。

生産計画 (1999-2003)

	単位	1999	2000	2001	2002	2003
殺菌ミルク	KL	802.5	882.5	962.5	1,042.5	1,112.5
乳酸ヨーグルト	KL	299.2	326.1	350.2	386.0	415.0
フルーツ ヨーグルト	KL	228.6	259.4	286.1	320.6	375.5
アイスクリーム	KL	5,834.4	6,276.1	6,820.5	7,116.9	7,640.2

ZET TRADING CO., LTD.

損 益 計 算 書 (Mil.Tg.)

	96年	%	97年	%	差異	98年1~6月	%
売上			576	100.0		353	100.0
売上原価			414	71.9		257	72.8
売上利益			162	28.1		96	27.2
一般管理販売費			65	11.3		29	8.2
営業利益			97	16.8		67	19.0
支払利息							
その他の				2.5			
税引前利益			97	16.8		67	19.0
租税			15	2.6		10	2.8
当期純益			82	14.2		57	16.2
(減価償却費)			-2			-2	

貸 借 対 照 表 (Mil.Tg.)

	1996年12月	%	1997年12月	%	差異	1998年6月	%
〈資産の部〉							
現金・預金	2	0.5	3	0.7	1	4	1.6
売掛金	37	9.1	49	11.7	12	28	11.5
その他の	15	3.7	23	5.5	8	9	3.7
製品	7	1.7	6	1.4	-1	6	2.4
原材料	10	2.5	5	1.2	-5	17	7.0
流動資産計	71	17.5	86	20.5	15	64	26.3
建物	307	75.6	307	73.3		153	63.0 *
機械等	30	7.4	30	7.2		30	12.3
(償却累計)	-2	-0.5	-4	-1.0	-2	-4	-1.6
固定資産計	335	82.5	333	79.5	-2	179	73.7
資産合計	406	100.0	419	100.0	13	243	100.0
〈負債の部〉							
買掛金							
未払金							
短期借入金							
長期借入金							
その他の	9	2.2	2	0.5	-7	6	2.5
負債計	9	2.2	2	0.5	-7	6	2.5
〈資本の部〉							
資本金	335	82.5	335	79.9		180	74.1 *
利益剰余金	62	15.3	82	19.6	82	57	23.4
資本計	397	97.8	417	99.5	-62	237	97.5
負債及び資本合計	406	100.0	419	100.0	13	243	100.0

Financial ratio	ZET TRADING CO., LTD. (Percentage)	
	1997	1998/1/6
Salis growth ratio		122.6
Operating profit return on sales	16	19.0
Recurrent profit return on sales	16.8	19
Return on assets	19.6	46.9
Return on equity	19.7	48.1
Current ratio	4300.0	1066.7
Fixed assets equity ratio	79.9	75.5
Equity ratio	99.5	97.5
Liability equity ratio	4.8	2.5
Liquidity ratio	6.3	6.8
Total assets turn over	137.5	290.5

運転資金	32.8 百万 Tg.	原料購入資金	
設備資金	623.2 百万 Tg.		
	ミルク容器詰機	(テトラパック/中国)	360.8 百万 Tg.
	ヨーグルト容器詰機	(上に同じ)	131.2 百万 Tg.
	クリーム容器詰機	(上に同じ)	82 百万 Tg.
	アイスクリーム製造機	(上に同じ)	30 百万 Tg.
	その他		19.2 百万 Tg.

## 8. 総評

### 8-1 診断評価要約

診断評価結果を「診断評価実施表」に示す。

- 強み
- 1) 社長のワンマン経営であり、決断力がある
  - 2) 国際的にも通用する衛生的工場にしたいという意志、願望を持っている。(今後に期待が持てる)
- 弱み
- 1) 食品衛生に対する意識が不足している。
  - 2) 工場内に不要機械が放置状態で、作業の邪魔になる
- 問題点
- 1) 現状では工場のレイアウトが悪い。
  - 2) 機械更新する資金不足。

**Company Diagnosis and Evaluation Table**

Date of evaluation:

1998

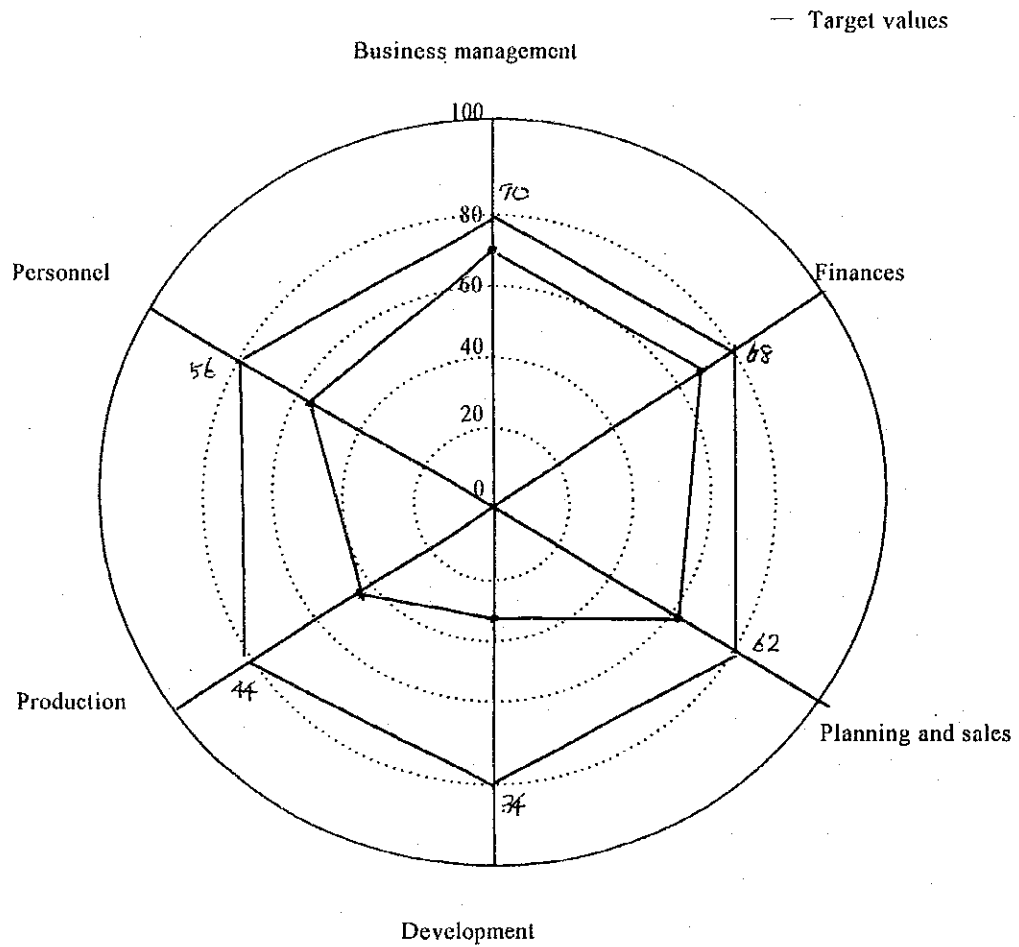
Zet Trading co., Ltd.

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
			Excellent	Good	Fair	Poor	Very Poor
Management and control	Leadership and character of the president		X	4	3	2	1
	Specialized technical capability of managers		5	X	3	2	1
	Business strategy and medium- and long-term planning		5	X	3	2	1
	Degree of enthusiasm regarding innovation		5	4	X	2	1
	Decision-making ability and judgment		5	X	3	2	1
	Policy indicated by the president (regarding ISO-9001)		5	4	3	2	X
	Evaluation in term of SWOT in the market economy		Average 3.5 (70)				
Planning and sales	Information collection and analysis ability (information on society, market demand, other companies, technology, etc.)		5	X	3	2	1
	Product planning capability (particularly capability to develop new products and price competitiveness)		5	X	3	2	1
	Market research		5	X	3	2	1
	Situation regarding preparation of sales network		5	X	3	2	1
	Overseas trade competitiveness		5	4	X	2	1
	Situation regarding service		5	4	X	2	1
			Average 3.1 (62)				
Development	Number of technical personnel and technical level		5	4	X	2	1
	Situation regarding acquisition of patents and other industrial technology rights		5	4	3	2	X
	Situation regarding preparation of technical standards		5	4	3	X	1
	Situation regarding use of external technology		5	4	3	X	1
	Degree of use of CAD and CAM		5	4	3	X	1
	Situation regarding preparations for ISO-9001 status		5	4	3	2	X
	Present situation regarding development facilities		5	4	3	2	X
		Average 1.7 (34)					
Production	Production technology footing		5	4	3	X	1
	Quality control system		5	4	3	X	1
	Situation regarding setting of work standards		5	4	3	X	1
	Situation regarding production facilities		5	4	3	X	1
	System and actual conditions of maintenance management		5	4	3	X	1
	Setting of standard times		5	4	X	2	1
	Cost management		5	4	X	2	1

Zet trading Co., Ltd.

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent - Good - Fair				
			5	4	3	X	1
Production	Situation regarding inventory management Activities for reduction of inventories		5	4	3	X	1
	Rejects depot		5	4	3	X	1
	Situation regarding measures for dealing with deficiencies		5	4	3	2	X
	System and record to date of management of orders placed Outside		5	4	3	X	1
	Situation regarding tool management		5	X	3	X	1
	Record to date concerning improvement activities		5	X	3	X	1
	Situation regarding implementation of "5S" campaign		5	4	3	X	X
			Average 2.2 (44)				
Personnel	Personnel grooming system for office work and technical Departments		5	4	X	2	1
	Personnel grooming system for the shop floor department		5	4	3	X	1
	Employee discipline		5	4	X	2	1
	Rate of employees staying with the company		5	4	X	2	1
	Work system		5	4	X	2	1
	Situation regarding labor unions		5	4	X	2	1
			Average 2.8 (56)				
Finance	Preparation and management of medium- and long-term profit plans		5	X	3	2	1
	Situation regarding preparation of financial statements		5	X	3	2	X
	Level of rate of ordinary profit to turnover		5	X	3	2	1
	Wage level		5	4	X	2	1
	Levels of research and development and plant and equipment investment		5	4	3	X	1
			Average 3.4 (68)				
			Overall evaluation points = sum of the average points / 6 x 20				
Other aspects	Content of concrete implementation of restructuring plans		5	X	3	2	1
	Content of concrete implementation of plans for promotion of privatization		5	4	3	2	1
Other matters worthy of mention							

Summary of Results of Evaluation of the Company, Zet Trading Co., Ltd.





### Explanation of Content of Overall Evaluation

Zet Trading Co., Ltd.

<b>Strengths</b>	1) The company is managed by one man, the president, who has total decision-making power.  2) He has the will and desire to improve the factory so it can meet international hygienic standards. (The future of the company can be expected.)
<b>Weaknesses</b>	1) There is insufficient consciousness of food hygiene.  2) Unnecessary machines are left in the factory, hindering the work.
<b>Problems</b>	1) The present layout of the factory is bad.  2) There is a shortage in funds for renewal of machines.
<b>Other aspects</b>	

**PROJECT**

**MEASURES TO ENCHANCE THE  
PRODUCTION OF BABY FOOD AND  
DAIRY PRODUCTS**

**“ ZET TRADE ” CO.,LTD.**

**ULAANBAATAR CITY, 1998**

PROJECT

MEASURES TO ENHANCE THE  
PRODUCTION OF BABY FOOD AND  
DAIRY PRODUCTS

PROJECT WAS FORMULATED BY  .....R. ZORIGT

ULAANBAATAR CITY, 1998

## ONE. Project Justification

The Mongolian people from ancient times has a tradition to consume milk and milk products. During the period of centralized management system the production of milk, butter and dairy products was centralized and organized in an administrative manner, which gave some positive results. Currently with the transition to the market system such an organization has lost its magnitude ending up with drastic production reduction during the first 2-3 years to compare with production of over 300 million liters of milk and 4850 tons of butter in 1990.

In particular, in recent years the mechanized dairy farms designed to supply the Ulaanbaatar city population with milk and dairy products have been privatized without any long-term plans and organization, which are now dominated only by personal profit making interests of their new owners, neglecting their technical reconstruction and focusing on selling non-processed milk, which has negative impact on the city population health.

Thus, the problem of bringing the quality of food products up to the physiological requirements, i.e. products with perfect composition and well digestible for ensuring good health for population which is the most precious social value of the nation. In particular, infants and children sent to nurseries, kindergartens and schools, breast-feeding mothers, aged people are in a very difficult situation, because they cannot afford to consume milk and dairy products rich in vitamins. Therefore, it is crucially important now to take decisive measures to address this acute problem.

The problems raised within our proposed project framework are very critical and constitute, like in other developed nations /Federal Republic of Germany, Netherlands, Denmark, Sweden and so on/, an integral part of a national childhood policy to be implemented with the direct Government involvement and participation.

This project was formulated, guided by the desire and intention to ensure stable and reliable production and supply with baby milk and food the infants under 3 years old in Ulaanbaatar city.

## TWO. Reasons for reduction in production of milk and dairy products

1. In the centralized planned economy production of milk, butter, baby food was organized and managed by the government in an administrative manner and it was heavily subsidized by the state. When the state subsidies were stopped this sector became inefficient, especially dairy farms ran into debts and became unlivable.
2. In the result of privatization domestic animals were transferred to herders' ownership and the centralized processing of milk and dairy products became impossible in most places.
3. In their turn many herders prefer to be engaged in trade and to do a business for their own sake and make profit, rather than getting into milk industry, which, to their mind, makes more losses than profit.
4. Lack of business responsibility, discipline and proper management organization.
5. Obsolete techniques and technology, since no any technical or technological reconstruction or renovation have taken place in recent years.
6. Lack of professional management of production, non-observance of the technological regime for raising highly productive cows and animals, very low per unit yield or productivity.
7. Since the property was alienated from owners, careless handling of property and its speculation due to the lack of ownership sense are aggravating.
8. As the production of vitamin rich milk food designed for babies, dystrophic children and women with anemia directly depend on the abovementioned production, the size of its output went down.

## THREE. Constraints in food supply due to the decline in the production of milk and dairy products

1. Milk is the sole product which substitutes breast milk and contains rare elements like albumin, vital acids, milk sugar and etc. Daily milk consumption norm for adults is 500 grams and for children - 800 grams. But at present time each Mongolian daily consumes food with approximately 1529-2129 calories, which satisfies only 19.0 - 68.9 per cent of his physiological need. Since 44.6 per cent of our population are children under 15 there is a great demand in milk and dairy products. Only in Ulaanbaatar now there are 2533 babies not breast fed, 2822 children with dystrophy, 3802 children suffer from malnutrition, and totally over 20,000 infants need baby food. However, this is not a complete data.

2. Milk is a nutritious food product. As of 1996 there were 40,000 babies under 3, out of whom 18,800 were hospitalized and they underwent medical treatment. 76 per cent of these children were underweight, 26,000 children were under constant dispensary control, out of whom 44 per cent were short of food albumin and acids. Infant hospitals, nurseries, kindergartens and crèches are undersupplied with milk food. In particular, in other cities and dwelling places, aimag and soum centers this still remains as the most complicated problem.

3. Selling milk without industrial processing and packaging is dangerous for the population due to its low quality and there is a high risk of getting infected by various infectious animal diseases while oral testing of milk when it bought by consumers. Cases of getting animal infectious diseases like brucellosis, dyspepsia, and some parasite infectious diseases among infants are becoming more often.

4. Prices for unpacked milk sold at shops or by individuals are going up from day to day, this makes this product unaffordable by low income families and their children for daily consumption. Currently milk price in Ulaanbaatar city in winter varies between 300-450 tugrigs and in summer - between 100-150 tugrigs.

5. In 1991 there were 367 baby food shops in Ulaanbaatar, but now there are only 17 left, which do not supply sufficient quantity of milk.

6. A wide variety of products is currently imported from abroad, but most of them do not satisfy fully the required demand in albumin, various minerals and vitamins, and some of them are even toxic.

#### **FOUR. Demand for milk and dairy products,**

At the donors' meeting held in Ulaanbaatar the UNDP Administrator Mr. William Draper said : "Today Mongolia is in a difficult situation. It is time to help our Mongolian friends. Apart from providing direct assistance to the health sector we uphold the direction of providing aid to other sectors related to the health". Mr. K.B. Coterie, a representative of UNICEF announced: " Three major programmes: Baby Food, Prevention from Gastric and Other Diseases will be implemented in Mongolia. Cooperation in this area will be expanded".

Recently the Government of Mongolia has adopted a Milk Programme, which is a very timely decision envisaging all support to initiatives and activities of individuals and economic entities aimed at promoting production and processing of milk and dairy products, as well as domestic and foreign assistance and investment in this sector.

To implement such a decision, arising from the critical need of Mongolian people, there is an urgent need to promote the production, processing and supply with milk, dairy products and baby food fully complying with the human health requirements.

#### **FIVE. Project goals**

##### **a. Major goals**

1. To streamline the operation of baby food production, enhance the quality of currently produced food staff like milk, dried and fresh curds and some others, and diversify the variety of food products.

2. To enhance the supply with baby food in Ulaanbaatar city, to improve the quality and diversify the variety of baby food and food products consumed by infants.

3. To improve the supply with quality and nutritive food the vulnerable social strata including, pensioners and those who are under discrepancy control.

4. To create jobs by promoting subsidiary farming and strengthen them with professional hereditary workers.

5. To ensure proper operation of the plant currently in recession. increase its output, improve its image and services, make distinctive its characters and ensure proper operation of its equipment and machinery.

6. To organize properly herds' turnover and restructure the "Davaanbulag" cattle-breeding farm in Bornuur soum of Tuv aimag and "Delguereh" farm in Jargalant village under the jurisdiction of Ulaanbaatar city, so that to supply the production with milk evenly during four seasons of the year.

#### **SIX. Long-term goals**

1. To pack disinfected milk and prepare it for producing from yogurt, cheese, cream, ice-cream, various types of curd and baby food, to construct a workshop for producing high quality and up to standard food, to introduce packing production line and compete at the market .

2. To renovate and expand the production technology and put up a dairy plant to satisfy fully the demand of a particular group of city people.

3. To create more jobs by expanding the production and, in particular, to create jobs for women.

4. To take measures to enhance employees' education and their knowledge about the production technology.

5. To supply Bornuur soum and Jargalant district population with highly productive pedigree cows through proper organization of the herd structure.



6. To deliver milk and dairy products up to quality standard requirements to diplomatic and international agency missions, hotels and service providing entities.

7. To establish partnership relations with producers from countries like the USA, Australia, New Zealand, Indonesia, Great Britain, France and some others with highly developed dairy industry and set up a small workshop for producing powder milk. /To go on study tour to the USA, Australia, New Zealand, Indonesia, Great Britain, France to study their milk industry status and experience.

8. To establish a small meat processing plant to satisfy the food demand of our factory employees.

9. To organize home delivery of our products to aged and disabled people, female headed families and mothers with babies.

10. The ultimate goal will be to turn our plant into a model for producing milk, dairy products and baby food in the capital city and prove that baby food production is profitable, and that it manufactures products vital for the population.

## **SIX. Justification for production of milk, dairy products and baby food**

### **1. Raw materials supply**

The plant will be processing milk - the major raw material, bought on contract basis from the mechanized dairy farm "Delguereh" in Jargalant village within Ulaanbaatar city jurisdiction and "Davaanbulag" company in Bornuur soum of Tuv aimag, which are subordinated to our Company. The longest distance of transportation of milk will be 105 km. There will not be any problem with transportation of milk. There is a potential to buy daily approximately 3000 - 5000 liters of milk.

### **2. Transportation and equipment**

Two GAZ tank-cars will transport the basic raw material - milk. The basic technological equipment for production remains obsolete. Measures

will be taken to modernize the production, purchase and install the latest technique and equipment required for producing baby food and expanding the production.

### 3. Personnel

The plant will have 95-105 employees, out of whom 40-60 will be engaged in the production of milk and dairy products. There will be enough work-force. The enterprise at own cost will carry out in-country and overseas training employees and up-grading their qualification.

### 4. Production cycle

The cycle of production of milk, butter, dairy products and baby food will be a non-stop a year round.

### 5. Farming

1. The farms will have the capacity on their own to organize haying and forage ensiling, however, they will definitely need to undergo technical reconstruction. Combined or concentrated forage and bran will be bought directly or on contract basis from Ulaanbaatar "Altan taria" Company or Darhan small flour mills.

2. From 1998 vegetables will be planted in the area of 110 hectares as raw material for producing baby food and for employees' consumption.

## **SEVEN. Project output and magnitude**

The Project implementation enabling us to undertake technical modernization of the plant will result in increasing 5 times the current output of major products like disinfected milk, fruit and acidopheline yogurt, ice cream, cream and some others, thus, facilitating to improve the supply with these products the city population. The plant will be selling its products through its 13 outlets, which will supply 20-30 per cent of all consumers with these products to. Such an increase in production of these products will consequently increase 4-5 times the supply with these products infants under 3 and week aged people in need.

In other words, the enterprise will produce daily 4500 liters of disinfected milk in summer, 1698 liters - in winter; 1038 liters of achedopheline yogurt in summer and 1301 liters - in winter; 500 liters of fruit yogurt in summer and 300 liters - in winter; and 3120 pieces of ice cream, which will be sold through its shops, selling points, and to hospitals, kindergartens, crèches, sanitariums and other economic entities placed orders with us.

As to the production period, June, July, August and September will be the pick months and during this season the plant will be operating every calendar day, while during other months it will operate every day except Sundays, and will supply the public with its products selling them through its shops, selling points and other entities. In the result of this the revenue will go up 27.2 times and mount to 636,650.8 thousand tugrigs, so that the enterprise annually will make over 80 million tugrig profit.

Because of the obsolete and worn out production equipment, which is not currently exploited, only 10 per cent of the production capacity is utilized. Equipment modernization will enable the enterprise to utilize 100 % its production capacity and two shift operation. As to the procurement of raw materials, the enterprise will buy milk from its Bornuur "Davaanbulag" and Partisan "Delguereh" farms, "Tsatsral" farm in Erdene soum, "Ardyn zorig" in Batsumber and small dairy farms and individuals in Mungun morit soum.

In winter some raw materials will be purchased from abroad or at the domestic market, and powder milk will be obtained at the market lowest price. Annual need in powder milk will be 100 tons.

The investment into the production of milk and dairy products and its expansion will result in increasing the production volume and output, in products' quality improvement. Thanks to packing the products will be better marketable, the enterprise will become efficient and its effective and even operation will be ensured. The loan obtained for investment will be paid back with the interest within ten years.

Please see all estimations related to the production of baby food and dairy products and some others from the annexed tables.

## ANNEX I

## INVESTMENT ESTIMATIONS

The undergoing investment is required in order to modernize and expand the production of baby milk and food, to enhance the production in general and raw materials supply:

1. Investment required for expanding and modernizing baby milk and food production:

No.	Investment list	Amount /in man. tigr./
1	Equipment for complete processing of milk in compliance with the standard and packing in 0.3-1.0 liters	360.8
2	Equipment for packing processed yogurt in 0.3 - 0.6 liters	131.2
3	Equipment for packing cream	82.0
4	10 machines for producing ice cream	30.0
5	Purchasing of packing materials	32.8
6	Cost of transportation and installation of equipment	19.2
	<b>TOTAL</b>	<b>656.0</b>

## ANNEX 2

## I. REVENUE ESTIMATIONS

I. PRODUCTION REVENUE SUMMERY

No.	Type of products	Measuring units	Production daily	! annual	Sales/price per unit	! total
1.	Disinfected milk	liter				
	in summer		5000	540000	200.0	108000.0
	in winter		1698	262500	600.0	157500.0
2.	Acidopheline yogurt	liter				
	in summer		1600	166400	300.0	49920.0
	in winter		800	132800	700.0	92960.0
3.	Fruit yogurt	liter				
	in summer		1400	145600	400.0	58240.0
	in winter		500	83000	800.0	66400.0
4.	Carrot curd	kg	19	1976	800	1580.8
5.	Mash with carrot	kg	10	1040	1000.0	1040.0
6.	Mashed potatoes	kg	20	3120	800.0	2496.0
7.	Fruit jam	kg	100	13000	850.0	11050.0
8.	Fruit juice	liter	200	20800	1050.0	21840.0
9.	Manna-croup porridge	liter	30	9360	600.0	5616.0
10.	Flour soup	liter	10	1040	800.0	832.0
11.	Soft drinks	liter	100	10400	80.0	832.0
12.	Ice cream	pcs.	3120	583440	100,0	58344.0
	Total					636650.8

## ANNEX 3

## II. ESTIMATION OF COSTS OF BASIC AND SUBSIDIARY RAW MATERIALS FOR PRODUCTION OF BABY MILK AND FOOD

No.	Basic and subsidiary raw materials	Measuring units	Demand	Costs	
				per unit /in tugrigrs/	Total price /in thousand tugr./
1.	Cow milk in summer	litre	924000	150.0	138600.0
	in winter	liter	402000	300.0	120600.0
2.	Milk powder	kg	100000	2000.0	200000.0
3.	Carrots	kg	3800	400.0	1520.0
4.	Potatoes	kg	1500	200.0	300.0
5.	Fruits	kg	1000	750.0	750.0
6.	Manna-croup	kg	5000	550.0	2750.0
7.	Butter	kg	1800	1600.0	2880.0
8.	Sugar	kg	10000	450.0	4500.0
9.	Starch	kg	1200	650.0	780.0
10.	Cooking soda	kg	200	200.0	40.0
11.	Oil-paper/or parchment	kg	800	350.0	280.0
12.	Flour	kg	4000	350.0	1400.0
13.	Cheese cloth	meter	1000	130.0	130.0
	TOTAL				474530.0

ESTIMATIONS OF THE TOTAL COST OF PRODUCTION OF  
BABY MILK AND FOOD

No.	Cost items	Measuring unit	Demand		Price	
			per shift	per annum	per unit	total /in thousand tugrigo/
1.	Electricity	kwt	10000	120000	60	7200.0
2.	Water	cub.m.	2000	24000	283	6792.0
3.	Heating	cub.m.	2400	19200	110	2112.0
4.	Steam	ton	100	1200	8500	10200.0
5.	Shop premises leasing	sq. m.	738	8856	1800	15940.8
6.	Transportation					2500.0
7.	Basic & subsidiary raw materials					474530.0
8.	Fixed assets depreciation					2500.0
9.	Communications					1200.0
10.	Spare parts					1900.0
	TOTAL					524874.8

ANNEX 4

IV. STAFF AND SALARY FUNDS of THE BABY MILK AND FOOD FACTORY AND FARMS

No.	Official posts	position	per employee monthly salary	Monthly salary fund	Annual salary fund /in th. tugr./
1.	Director	1	70000	70000	840.0
2.	Deputy Director	1	60000	60000	720.0
3.	Senior accountant	1	50000	50000	600.0
4.	Technologist	1	50000	50000	600.0
5.	Laboratory assistant	1	35000	35000	420.0
6.	Treasurer	1	35000	35000	420.0
7.	Guard	4	35000	140000	1680.0
8.	Driver	1	35000	35000	420.0
9.	Service personnel	16	30000	480000	5760.0
10.	Cleaners	2	25000	50000	600.0
	<b>TOTAL</b>	<b>29</b>			<b>12060.0</b>

2291 thousand tugrigns will be paid as employees' medical and social insurance policy.

Y. PRODUCTION EFFICIENCY ESTIMATIONS

Revenue	Income from selling baby milk & food	636650.8 ✓
<b>Total</b>		<b>636650.8</b>
Cost	BMF production cost	524874.8
	Employees' total salary	12060.0
	Medical & Social insurance	2291.4
<b>Total</b>		<b>539226.2</b>
Efficiency		97424.6
Corporate tax 15%		14613.7
Net profit		82810.9

Estimations were made by



G. BATDORJ  
Accountant



## LOAN AND INTEREST PAYMENT SCHEDULE

Loan and interests are due to repayment within 10 years , however, the payment is planned to be effected in the following way:

The loan and 8.0 % interest will be paid within 10 years. The principal loan will be US \$ 800.0 thousand or 656.0 million tugrigs, the total sum of its interest during 10 years will mount to US \$ 380.8 thousand or 312.6 million tugrigs. Thus, the total amount of the principle and its interest to be repaid will be US \$ 1180.8 thousand or 968.6 million tugrigs.

Loan to acquire	Loan repayment	interest rate	total payment	balance
US \$ 800000.0 T 656000000.0	US \$ 800000.0 T 656000000.0			

	Loan		Loan repayment		Loan interest		Total payment		Balance	
	000. US \$	mln. T.	000. US \$	mln. T.	000. US \$	mln. T.	000. US \$	mln. T.	000. US \$	mln. T.
1st year	800.0	656.0			64.0	52.5	64.0	52.5	800.0	656.0
2d year	800.0	656.0	90.0	73.8	64.0	52.5	154.0	126.3	710.0	582.2
3d year	710.0	582.2	90.0	73.8	56.8	46.6	146.8	120.4	620.0	508.4
4th year	620.0	508.4	90.0	73.8	49.6	40.7	139.6	114.5	530.0	434.6
5th year	530.0	434.6	90.0	73.8	42.4	34.8	132.4	108.6	440.0	360.8
6th year	440.0	360.8	90.0	73.8	35.2	28.9	125.2	102.7	350.0	287.0
7th year	350.0	287.0	90.0	73.8	28.0	23.0	118.0	96.8	260.0	213.2
8th year	260.0	213.2	90.0	73.8	20.8	17.1	110.8	90.9	170.0	139.4
9th year	170.0	139.4	90.0	73.8	13.6	11.2	103.6	85.0	80.0	65.6
10th year	80.0	65.6	80.0	65.6	6.4	5.3	86.4	70.9		
Total			800.0	656.0	380.8	312.6	1180.8	968.6		

**DEMAND OF MILK AND MILK PRODUCTS  
PRODUCTION, PRODUCTION, PLANNING**

( 10 years)

**1. Sterilized Milk ( Thousand liters)**

	<b>Total demand of Ulaanbaatar city</b>	<b>Production of "ZET" Trade Co.ltd</b>	<b>Other companies production</b>	<b>Import</b>
<b>1996</b>	1687.6	509.0	421.9	
<b>1997</b>	1720.0	518.0	436.1	
<b>1998</b>	2103.4	640.0		
<b>1999</b>	2150.6	802.5		
<b>2000</b>	2237.9	882.5		
<b>2001</b>	2406.2	962.5		
<b>2002</b>	2606.5	1042.5		
<b>2003</b>	2790.9	1122.5		
<b>2004</b>	2900.0	1200.0		
<b>2005</b>	3000.0	1200.0		

**2. Acidopheline yogurt ( Thousand liters)**

	<b>Total demand of Ulaanbaatar city</b>	<b>Production of "ZET" Trade Co.Ltd</b>	<b>Other companies production</b>	<b>Import</b>
1996	460.7	128.0	50.6	
1997	540.8	153.6	51.3	
1998	686.5	206.0		
1999	748.1	299.2		
2000	825.7	326.1		
2001	900.6	350.2		
2002	950.4	386.0		
2003	1000.0	415.9		
2004	1050.6	450.0		
2005	1100.0	450.0		

### 3. Fruit Yogurt ( Thousand liters)

	Total demand of Ulaanbaatar city	Production of "ZET" Trade Co.Ltd	Other companies production	Import
1996	351.5	56.1	70.3	
1997	430.5	97.5	157.6	
1998	510.6	124.2		
1999	586.2	228.6		
2000	650.0	259.4		
2001	720.6	286.1		
2002	800.0	320.6		
2003	930.7	375.5		
2004	1050.6	400.0		
2005	1100.0	400.0		

### 4. Ice cream ( Thousand liters)

	Total demand of Ulaanbaatar city	Production of "ZET" Trade Co. Ltd.	Other companies production	Import
1996	14702.4	3675.6	4410.7	2205.4
1997	16518.0	4129.5	5781.3	2477.8
1998	18560.2	4640.8		
1999	19448.0	5834.40		
2000	20920.5	6276.1		
2001	22735.0	6820.5		
2002	23490.0	7116.9		
2003	23935.0	7640.2		
2004	24380.0	8000.0		
2005	25000.0	8000.0		



Zet trading

Z trading  
05.07.23

PRODUCTION EFFICIENCY ESTIMATIONS

/ Thousand tugrings /

	1999	2000	2001	2002	2003	2004	2005	2006
<b>Revenue</b>								
Income from selling baby milk & food	636650.8	736944.8	828814.2	951836.9	1043121.7	1073550.0	1103978.3	1134406.6
<b>Cost</b>								
<b>Total</b>	<b>636650.8</b>	<b>736944.8</b>	<b>828814.2</b>	<b>951836.9</b>	<b>1043121.7</b>	<b>1073550.0</b>	<b>1103978.3</b>	<b>1134406.6</b>
BMF production cost	524874.8	562984.1	662527.7	772257.2	849561.1	873739.8	898150.8	920676.1
Employees total salary	12060.0	12050.0	14472.0	17472.0	20813.6	25813.6	28394.9	31234.4
Medical & Social insurance	2291.4	2291.4	2749.7	3319.7	3954.6	4904.6	5395.0	5934.5
Loan interest	52500.0	52500.0	46600.0	40700.0	34800.0	28900.0	23000.0	17100.0
<b>Total</b>	<b>591726.2</b>	<b>629635.5</b>	<b>726349.4</b>	<b>833748.9</b>	<b>909129.3</b>	<b>933358.0</b>	<b>954940.7</b>	<b>974945.0</b>
<b>Efficiency</b>	<b>44924.6</b>	<b>90109.3</b>	<b>102464.8</b>	<b>118088.0</b>	<b>153992.4</b>	<b>140192.0</b>	<b>149037.6</b>	<b>159461.6</b>
<b>Corporate tax</b>	<b>6738.7</b>	<b>13516.4</b>	<b>15985.9</b>	<b>22235.2</b>	<b>28597.0</b>	<b>31076.8</b>	<b>34615.0</b>	<b>38784.6</b>
<b>Net profit</b>	<b>38185.9</b>	<b>76592.9</b>	<b>86478.9</b>	<b>95852.8</b>	<b>105395.4</b>	<b>109115.2</b>	<b>114422.6</b>	<b>120677.0</b>

2 522 2 150

Estimations were made by

G. BATDORJ  
Accountant





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