

TRACEA Trade Facilitation,  
Customs Procedures and  
Freight Forwarding Project  
**Transportation of  
Uzbekistan Cotton  
Final Report**  
September 1997

Part 1 - Market Profile (revised)

Part 2 - Logistics Development

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**TRACECA PROJECT**

**TRADE FACILITATION, CUSTOMS PROCEDURES AND  
FREIGHT FORWARDING**

**TRANSPORTATION OF  
UZBEKISTAN COTTON PROJECT**

**FINAL REPORT**

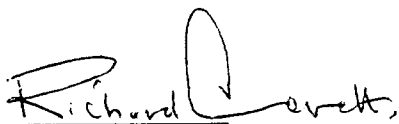
**PART 1 - MARKET PROFILE (revised)**

**December 1996**

**PART 2 - LOGISTICS DEVELOPMENT**

**September 1997**

**Transportation of Uzbekistan Cotton Project**  
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Final Report

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**LIST OF CONTENTS**

<b>Executive Summary of Conclusions and Recommendations</b>	<b>3</b>
<b>PART 1 MARKET PROFILE</b>	
<b>1. Introduction</b>	<b>10</b>
<b>2. Profile of the Cotton Market</b>	<b>13</b>
<b>2.1 World Market</b>	<b>13</b>
<b>2.2 European Market</b>	<b>17</b>
<b>3. European Market Survey</b>	<b>22</b>
<b>3.1 Introduction</b>	<b>22</b>
<b>3.2 Buying Terms and Transport Criteria</b>	<b>23</b>
<b>3.3 Costs</b>	<b>24</b>
<b>3.4 Logistics</b>	<b>26</b>
<b>3.5 Quality Issues</b>	<b>29</b>
<b>3.6 Containerisation</b>	<b>29</b>
<b>3.7 Use of Poti</b>	<b>31</b>
<b>4. Uzbekistan Survey</b>	<b>33</b>
<b>4.1 Market Profile</b>	<b>33</b>
<b>4.2 Identification of Sellers and Purchasers</b>	<b>34</b>
<b>4.3 Terms of Sale</b>	<b>35</b>
<b>4.4 Classification and Pricing</b>	<b>36</b>
<b>4.5 Logistics</b>	<b>37</b>
<b>4.6 Shipments via Poti</b>	<b>38</b>
<b>5. Development Trends</b>	<b>41</b>
<b>5.1 Advantages of TRACECA</b>	<b>41</b>
<b>5.2 Containerisation</b>	<b>44</b>

## **Executive Summary of Conclusions and Recommendations**

The Technical Assistance programme was commissioned in October 1996 to assist the Government of Uzbekistan in developing the movement of cotton along the TRACECA corridor. The initial programme consisted of two parallel market research programmes - one in Europe and the other in the TRACECA region. These were designed to provide a more comprehensive picture of the cotton market and the potential to use the corridor and introduce multi-modal transport systems. A Transport Commission has been formed in Uzbekistan to facilitate the development of cotton shipments along the TRACECA route.

### **Conclusions**

#### **Part 1 - Market Profile**

(Produced in December 1996 and up-dated)

#### **World Market**

- 1) World cotton production is approximately 19 million tonnes per annum. Uzbekistan with a production of around 1.1-1.2 million tonnes per annum is the 5th largest producer accounting for 6-7% of world production.
  
- 2) World consumption has fallen below expected levels and this has resulted in a significant increase in stocks to almost 10 million tonnes.
  
- 3) Uzbekistan with limited home consumption is the world's second largest exporter accounting for 16% of world exports. Prices are predicted to fall due to the high stock levels.
  
- 4) Europe is a significant consumer of cotton with 14% of consumption. It imports 36% of all exports but tonnage's are falling due to the closure of spinning mills, especially in the higher labour cost economies of northern Europe.

#### **European Market Research**

- 5) The main growth import markets for cotton in Europe are in the south - Italy, Portugal and Turkey - which are well located to be served from the TRACECA corridor.
  
- 6) Cotton is sold on FOB (Free-on-Board) terms. The seller is responsible for the primary distribution from the point of origin through to the port of shipment. The buyer is responsible for the movement from the port of shipment through to the end user. Most ports of shipment for Uzbek cotton are in Europe.

7) The price of cotton is mainly dependant on quality or grade but also on subjective factors such as image and market factors, such as increased stock levels. Cotton from Uzbekistan currently sells at lower prices than other cottons. Grading reliability is a significant factor in lower pricing.

8) Most Uzbek cotton is routed via Riga in Latvia. This is the preferred location of most buyers because of good facilities. Problems are being incurred due to lack of storage capacity and organised crime. Ilyechovsk is used mainly for shipments to the Mediterranean area as secondary distribution costs for such destinations are lower than using Riga. Bandar Abbas is perceived as the new opportunity with the rail link and good shipping services to the Far East.

9) There are significant problems in grading or classification. The current system based in localised classification at the ginnery does not meet buyers requirements. There are also problems relating to damaged and rotting bales which cannot be detected using exiting sampling methods.

10) Merchants use containers extensively for secondary distribution. The Central Asian bales are considered to be the most suitable for containerisation given their higher load factor. It will be necessary to consider changes in shipping terms if containerisation is to take place at source.

11) The cotton merchants did not consider Poti to be an attractive port of shipment. They had concerns relating to security, restrictive practices and lack of shipping services. Although some concerns may not be fully justified, it is clear that there was a credibility problem which needed to be addressed.

### **Uzbekistan Market Research**

12) The selling of export cotton in Uzbekistan is controlled by the Ministry of Foreign and Economic Relations. Uzhlopkopromsbyt as part of the Ministry of Industry is responsible for the purchasing of the cotton and primary distribution up to the port of shipment. Uzvneshtans arrange for the movement of the cotton from the ginnery to the port of shipment.

13) There are problems of under-investment in quality local transport facilities, at the ginneries and in packaging equipment which affect productivity and quality of service.

14) Storage facilities in Poti are inadequate to meet current demand and lack appropriate fire protection systems. The loading performance of the port was poor due to lack of equipment, power, dedicated facilities and limited control over the labour.

15) The existing terms of sale represent a compromise between the conflicting interests of the seller and the buyer and there is currently no demand for change by the merchants. Lower primary distribution costs using Poti would be advantageous to the seller.

16) Containerisation of cotton is only likely to be viable if it involves a marine leg on the journey. This means that if cotton is to be containerised in Uzbekistan it will have to be moved on a door-to-door basis.

17) There are major concerns regarding the viability of using containers for cotton due to the low load factor on the surface transport leg, leading to high unit costs, and the availability of empty containers in the immediate vicinity of the growing areas.

## **Part 2 - Logistics Development**

18) There is a lack of modern logistical planning in the movement of cotton along the TRACECA corridor. This results in significant variations in volumes in transit, thus creating problems at the “pressure points “ along the route.

19) These key “pressure points” along the route are the single line rail line through Turkmenistan, the Trans-Caspian ferry link, the mountain section west of Tbilisi and the storage warehouses in Poti. The potential capacity conflicts on the ferry service across the Caspian is considered the most serious constraint.

20) There is insufficient warehousing capacity in Poti to provide both transit and stock storage. The existing capacity is further constrained by volumes of damaged cotton awaiting disposal. New capacity is required immediately and a solution to the sale of the damaged cotton needs to be agreed and implemented.

21) There has been a significant and creditable improvement in handling performance at Poti. This is mainly due to enhanced labour performance, as there has been no investment in equipment. However, performance is still not comparable to Riga or Western ports and therefore investment is required.

22) TACIS should consider investments in infrastructure and equipment which will enhance the movement of cotton along TRACECA. This should be limited in order to avoid obscuring institutional problems. A ceiling of 2 million ECU per investment was proposed.

23) The development of a Logistics Centre at Bukhara would assist in the controlled despatch of cotton along TRACECA and in the provision of facilities for existing and future containerised shipments. An intervention by TACIS to provide equipment would enhance the capabilities of such a Centre.

24) The active involvement and support of the organisations who are currently involved in the logistical control of export cotton shipments will be essential to ensure the Centre achieves its objectives.

25) There are proposals for a new 30,000 sq. metre warehouse at Poti with possible EBRD funding of \$6-10 million. However, this will take some years to agree finance and construct. There is a need for an interim strategy to handle the increased cotton movements in 1998. The existing tea warehouses could be developed on a phased basis to provide more storage.

26) The provision of a baling plant at Poti would enable damaged bales to be repacked and sold, thus generating income and providing additional storage space.

27) It is necessary to consider investment in equipment at the Port of Poti as it will not be possible to make further improvements in performance totally on the basis of enhanced labour performance.

28) If Poti is to retain its position as an important cotton port and expand its role, it will be essential to provide dedicated or prioritised berths for the handling of cotton. Potential minor investments by TACIS would be specifically directed towards cotton handling, rather than general investment in the port as a whole. A dedicated berth could be one of the conditions of any intervention.

29) Any intervention would need to address the main problems of crane downtime, interruptions in power supply and shortages of transverse handling equipment.

30) The costs of moving cotton from the ginneries to the ports for FOB sale favour the use of the TRACECA corridor. This is due to the attractive rail rates with the shorter distance.

31) The unit costs per tonne of moving cotton in containers are substantially higher than using the current conventional system of covered rail wagons to the FOB port or DAF border.

32) The main reasons for this cost differential are:

- economies of scale - 51.6 tonnes in a 14 metre covered wagon but only 27 tonnes in two containers on the equivalent 14 metre flat wagon
- current rail tariffs tend to discriminate against containerisation with special rates for conventional shipments
- indicated costs are based on small volumes of containers versus large volumes of conventional cotton shipments thus there is a currently lack of volume discounting.



- 33) There are no technical reasons why cotton cannot be containerised in Uzbekistan, though the lack of specialised resources dictates the use of consolidation centres. This leads to increased unit costs incurred in the collection process prior to the containerisation, though these additional costs are not sufficient to render the process uncompetitive versus existing conventional methods.
- 34) There is concern that the numbers and ownership of the empty containers in Uzbekistan, particularly 40 ft units may not be sufficient to support a major transfer of cotton into containers.
- 35) The key constraint to containerisation is the rail unit movement cost between the Uzbekistan border and the FOB port or FOR border. The use of door-to-door movements does not provide sufficient savings to mitigate these extra charges. The potential for reductions is limited particularly on TRACECA with the Trans Caspian link. Current economics suggest that Riga is better for containers than via Poti but that Poti is much better for conventional bulk movements.
- 36) Initial examination of the rail charges indicates that there is scope for introducing special rates for containers which would encourage their use and the development of door-to-door services.
- 37) The proposals to sell cotton ex-designated logistics centres will not in itself promote containerisation. There is concern that the buyers may not be attracted by the proposals and the cash flow implications may not have been fully assessed. It is important that the implications of changes in the selling terms are fully understood.
- 38) Containerisation is not expected to achieve significant penetration of the cotton market in the short term. Its longer term use will be determined by more favourable transport economics. Development of door-to-door services by carriers or via the planned through services to Europe across the Black Sea could result in more favourable transport economics leading to growth in container movements.

### Recommendations

#### **Part 1- Market Profile**

- 1) It was recommended that the Technical Assistance programme should be re-focused to address the concerns identified within the research programme. This will place greater emphasis on improving existing transport systems and lower emphasis on containerisation.
- 2) It was recommended that all cotton shipments moving along the TRACECA route should be monitored. The results should be reviewed by the Transport Commission and remedial action proposed where problems are identified.

3) It was recommended that a specific investment appraisal should be made concentrating on the requirements at the Port of Poti and the need for consolidation facilities in Uzbekistan. The objective will be to propose where investment is required to make the TRACECA route more efficient in the handling of cotton shipments.

4) It was recommended that a detailed examination should be made of the technical issues relating to containerising the cotton and how these can be resolved to consider the introduction of door-to-door container movements. Further study of the differing options on Terms of Sale relating to container movements should be evaluated.

5) It was recommended that a cost benefit study of containerisation should be undertaken to ensure that proposals to containerise cotton are economically realistic in view of Daewoo concerns on this aspect. The study should provide comparative costings using each of the main transport corridors.

6) It was recommended that the Transport Commission should be actively involved in the programme through regular meetings to review the findings of the Technical Assistance programme.

## **Part 2- Logistics Development**

7) It is recommended that the logistical monitoring system is extended to include the collection of the cotton from the ginneries. In effect, the cotton could be “called-off” at a specific time and date to meet a scheduled block train. This would give logistics management control from point of collection to the delivery point. This will result in an improved work patterns, enhanced reliability of transit times and reduce the risk of demurrage payments caused by delays.

8) It is recommended that TACIS consider a phased programme of investment in equipment for the proposed Logistics Centre at Bukhara. The amount should not exceed 2 million ECU and should include provision for spares and servicing facilities.

9) It is recommended that the intervention should be subject to conditionalities. The key conditions would be that the Centre is constructed using non-EU funding and that it has the support of the controllers of export cotton.

10) It is recommended that a technical study by TACIS is made as to the potential to refurbish and extend the existing tea warehouses so as to maximise the storage resources at that site as an interim solution until the new warehouses are constructed. The anticipated costs of this development would be 1.5 million ECU.

- 11) It is recommended that TACIS consider providing funding for a new baling plant as part of the development of storage facilities at Poti. The estimated cost of 80,000 ECU would be justified by the additional income from sale of damaged cotton.
- 12) It is recommended that TACIS consider providing up to 0.5 million ECU for refurbishment of quayside cranes, a mobile generator and small fork lift trucks. Any intervention should be subject to conditionalities, particularly a dedicated or prioritised cotton berth, possibly Berth No 9.
- 13) It is recommended that the organisations involved in the logistical management of export cotton undertake a detailed cost benefit analysis prior to promoting new routings and methods of shipment
- 14) It is recommended that a study is made by the Commission as to the numbers of empty 20ft and 40ft containers in Uzbekistan over a period to identify the potential surplus. This should include identification of ownership and potential return route restrictions
- 15) It is recommended that special rates are negotiated for the movement of containers westbound such that the use of containers becomes competitive with conventional rail movement. The TRACECA Rail Tariff Project should specifically consider this issue.
- 16) It is recommended that the implications of significant changes in the way cotton is sold to the international buyers is fully analysed by the appropriate organisations prior to implementing such changes.

## **PART 1 - MARKET PROFILE**

### **1. Introduction**

Partner States from Central Asia and the Caucasus region requested the TRACECA programme management to provide specific technical assistance related, amongst other issues, to the shipment of cotton through the TRACECA corridor. At a meeting held in Brussels on March 25th 1996, the management of the TRACECA project specifically asked project managers to incorporate active assistance to the shipment of Uzbekistan cotton along the corridor.

The Governments of Uzbekistan, Turkmenistan, Azerbaijan and Georgia signed an agreement on the 14th May 1996 to increase their use of the Georgian ports of Poti and Batumi. This would be expected to significantly increase the overall traffic flows, particularly of cotton, both through the ports and along the TRACECA corridor. It is understood that these were agreements in principle, rather than contractual obligations, and therefore only a statement of intent to route traffic through the ports.

The Decree by President Karimov of Uzbekistan, Number 194 ratified on the 31st May 1996, stated in summary that a plan be worked out to define and establish specific places for loading cotton fibre into containers for the export of 10,000 tonnes in 1996, 30,000 tonnes in 1997 and up to 100,000 tonnes by the year 2000 through the Port of Poti. In addition, a consolidation warehouse with a capacity of 40,000 tonnes of cotton should be established in Bukhara, with appropriate testing laboratories. A representative would be located in Poti to control the operation and the shipping of import and export loads, working on behalf of the Government of Uzbekistan.

In response to the request from the TRACECA management, the Multi-Modal Transport project conducted an initial survey of the cotton market in Uzbekistan in May/June 1996 with the specific remit to examine the potential to use multi-modal methodology in the export of cotton. This survey highlighted the problems involved in transporting cotton, the current routings used and identified possible opportunities to containerise shipments through the port of Poti.

Following an exchange of letters with the TRACECA management and a draft Terms of Reference published in the Multi-Modal project Progress Report, a technical assistance programme was agreed. The project was confirmed and commenced late October 1996. The initial programme consisted of two key elements:

- A Market Appraisal. Two surveys were to be conducted in parallel, one in Europe studying the European market and its perspectives and the other in Uzbekistan studying the current market situation from an Uzbek market perspective. The objective of the appraisal was to provide a clearer understanding of the current environment and to identify the specific needs of the technical

assistance programme. This was considered essential to ensure that the project was relevant and focused towards recommendations which would initiate change. This report contains the results of these two surveys

- The establishment of a Transport Commission (or Shipment Task Force) to facilitate the development of cotton shipments along the TRACECA corridor. Following a formal approach through TACIS to the Government, the Commission to co-ordinate and develop this programme was agreed to be formed by the Cabinet of Ministers on 1st November 1996 and the membership was confirmed at the end of November.

The appointed membership of the Commission is as follows:

**Abdugaffar A Vakhobov**, Chief of the Department, Uzgoshlopkopromsbyt

**Fuod V Bakhadirov**, General Director, Uzbekjeldorexpediciya

**Murat A Khalisov**, Assistant of General Manager, Shoshtrans

**Sergey G Trikov**, Head of Auto Transportation Department, MVES

**Rustam Tashpulatov**, Chief Expert, Firm "Export", Uzvneshtrans

**Tulkum Rathmanor**, Head of Main Customs Organisation of Customs Control of Trading Customs Department

Meetings have been held with all members and the inaugural Commission Meeting was held on 12th December 1996.

#### Implementation of Presidential Decree

With regard to the implementation of the Presidential Decree, although the representative of the Uzbek Government is not yet in place in Poti, the state transport company Uzvneshtrans (UZV) has appointed Georgian Trans Expedition Ltd (GTE) to provide storage and facilitation services in Poti. It has been indicated that the Uzbek Government representative will also be establishing a "Marketing Institute" in Poti to help the sale of cotton through Poti port.

A potential building in Bukhara for use as a consolidation warehouse has been identified. However, it will require substantial refurbishment to adapt it for use as a cotton store and as yet no funding has been obtained to enable work to commence.

#### Report Structure

The Terms of Reference indicated that an Interim Report would be produced by the Commission within two months. Due to delays in commencement of the programme and formation of the Commission, this Profile or Interim Report has been produced by the Consultants, rather than by the Commission. The profile will be used as an initial input to the Commission to identify existing problems and to confirm a future programme to resolve these issues. The structure of this Interim report is as follows:

#### **Section 2: Profile of the Cotton Market**

This provides information on the overall world and European markets indicating production, consumption export volumes and stock levels.

### **Section 3: European Market Survey**

This details the results of the research undertaken in Europe. It represents the European perspective and it is recognised that this may differ from the perceptions in Uzbekistan. All the main cotton buyers were included in the survey.

### **Section 4: Uzbekistan Survey**

This details the results of the research undertaken in Uzbekistan and is a more comprehensive survey to that undertaken last May/June. The results are based on interviews with the key organisations involved in the export of cotton and visits were made to key locations in Uzbekistan and along the TRACECA corridor.

These two market appraisals were specifically undertaken without contact between the two market research teams to ensure that the differing perspectives were obtained and to enable cross-referencing of data. It is recognised that there is duplication within these sections. This has been retained in order to demonstrate the similarity in conclusions, especially those relating to the use of the corridor and containerisation.

### **Section 5: Development Trends**

This evaluates the results of the surveys and examines potential changes or opportunities in the market which could result in increased utilisation of the TRACECA corridor and use of multi-modal systems.

### **Section 6: Proposals for a Technical Assistance Programme**

This identifies potential new Terms of Reference for the second part of the project based any re-definition or re-focusing of the programme as a result of the market appraisals. This section forms the basis for the technical assistance in 1997.

## 2. Profile of the Cotton Market

This section examines the world and European cotton markets to identify the existing and future consumption and import demand. It provides data on the trading environment in which cotton from Uzbekistan is sold and transported along the transport corridors from the producers to the cotton merchants.

### 2.1 World Market

Cotton is a product grown world wide and is traded in an international market. There are significant annual fluctuations in production in the various producing zones due to climatic variations and many hazards affecting the quality (parasite problems). This results in problems in obtaining accurate data. The production figures are reviewed and published on a constant basis by the International Cotton Agreement Industry (ICAC).

Table 1 provides an overview of the world cotton market, as estimated in April 1996.

**Table 1: World Cotton Market**

in millions of metric tons

<i>Campaigns beg. Aug. 1st.</i>	<i>1994-95 (estimates)</i>	<i>1995-96 (projection)</i>	<i>1996-97 (projection)</i>
<b>Initial Stocks, August 1</b>			
<i>World total</i>	7.03	7.56	8.01
China	2.12	2.97	3.39
USA	0.77	0.58	0.67
Total, net exporters	3.34	3.05	3.05
Net importers <sup>1</sup>	3.69	4.51	4.95
<b>Production</b>			
<i>World total</i>	18.69	19.23	19.77
China	4.34	4.5	4.1
United States	4.28	3.9	4.3
India	2.36	2.35	2.46
<i>=&gt;&gt; Uzbekistan</i>	1.25	1.27	1.22
Pakistan	1.48	1.73	1.76
Turkey	0.63	0.84	0.79
Others	4.34	4.63	5.15
<b>Consumption</b>			
World Total	18.48	18.78	19.24

<sup>1</sup> Brazil, China, Colombia, Mexico, Turkey and traditional importers except Greece

Table 1 Continued

<b>Consumption by country or region</b>	<b>1994-95 (estimates)</b>	<b>1995-96 (projection)</b>	<b>1996-97 (projection)</b>
China	4.34	4.60	4.50
United States	2.43	2.26	2.50
India	2.26	2.38	2.47
Pakistan	1.52	1.52	1.56
Former Comecon	1.05	1.01	1.04
Brazil	0.84	0.87	0.89
<b>=&gt;&gt; EU and Turkey</b>	<b>2.06</b>	<b>2.07</b>	<b>2.10</b>
Other South East Asia <sup>2</sup>	2.19	2.19	2.18
Others	1.82	1.88	1.99
<b>Exports</b>			
<b>World total</b>	<b>6.28</b>	<b>6.31</b>	<b>5.7</b>
United States	2.05	1.65	1.65
<b>=&gt;&gt; Uzbekistan</b>	<b>1.15</b>	<b>1.03</b>	<b>0.98</b>
Franc Zone	0.59	0.61	0.67
Others			
<b>Imports</b>			
<b>World total</b>	<b>6.63</b>	<b>6.31</b>	<b>5.7</b>
South East Asia	2.15	2.22	2.15
<b>=&gt;&gt; EU and Turkey</b>	<b>1.28</b>	<b>1.17</b>	<b>1.28</b>
Former Comecon	0.93	0.93	0.93
South America	0.47	0.63	0.51
China	0.88	0.60	0.20
<b>Closing stocks, August</b>			
<b>World total</b>	<b>7.56</b>	<b>8.01</b>	<b>8.54</b>
China	2.92	3.39	3.14
USA	0.58	0.67	0.83
Total, net exporters	3.05	3.05	3.66
Net importers	4.52	4.95	4.87

Source: International Cotton Agreement Committee (ICAC), April 1996

<sup>2</sup> Indonesia, Malaysia, Philippines, Thailand, Vietnam



## Comments on Table 1 - World Cotton Market

According to these 1996 estimates, the total cotton available on the world market (stock + production) is expanding from 25.7 million tonnes in 1994/95, to 26.8 million tonnes in 95/96 and up to 27.8 million tonnes in 1996/97. This is mainly due to an increase in production from 18.7 million tonnes in 1994/95 to 19.8 million tonnes estimated in 1996/97. The latest market information available indicates a reduced estimate for production down to 19 million tonnes, partially due to the problems with the 1996 harvest in Uzbekistan.

### *Forecasts for the 1995-96 Season*

#### **Production**

China is the largest producer, followed by US, India and Pakistan. Uzbekistan is the 5th largest producer accounting for 6-7 % of total world production. In July 1996, when the season crops were completed in the southern hemisphere, the production of the 1995-1996 season was increased to an estimated 19.35 m tonnes. This was an increase on the previous year and was projected to be the second largest on record (20.7 m tonnes in 1991/2).

The average yield has declined to 545 kg of fibre per hectare on a total surface of about 35.5 million hectares (ICAC). This was 4 percent less than that of the preceding season and well under the level of 600 kg per hectare which had been reached in 1991/92. This decline was mainly due to a drop of 24% (almost 200 kg of fibre per hectare) of the yield in the United States, as compared to the established record in 1994/95 of 744 kg fibre/ha. Although the surface increased by 20%, the American production declined by 9% (-370,000 tonnes), falling to 3.9 m tonnes, a deficit of 900,000 tonnes (19%) as compared to the forecasts. This decline is significant given that the US represents over 20% of world production.

In almost all the other countries, however, the production was higher than the forecasts, especially in Pakistan (at least 1.7 million tonnes against less than 1.5 million tonnes last year) and in India (2.5 million tonnes against 2.35 million tonnes). The production of Uzbekistan cotton was forecast to remain stable at around 1.25 million tonnes per annum.

#### **Consumption**

World consumption for the season 1995/96 is estimated around 18.8 million tonnes. Demand has remained stagnant since 1986-87 because of the fall in consumption of the countries of the ex Comecon (- 2 million tonnes) and decline of the cotton spinning industry. Consumption of cotton has been weak in the US, in the Far East, in South America and in Europe where spinning mills were being closed and subject to bankruptcy. For the first time, American consumption also decreased in 1995/96, falling from 2.43 million tonnes to 2.26 million tonnes. The combination of low growth in

consumption (+1.6%) and the increase in production (+2.9%) has led to an overall increase in stocks (+5.9%).

### **Exports**

For the season 1995-96, the volume of exports is expected to reach a record of 6.3 million tonnes equating to a third of the total world production. The contraction of American exports was compensated by increased exports from Pakistan, India, Turkey, Argentina and Australia. Uzbekistan, with limited domestic consumption, is the second largest cotton exporter, after the United States, accounting for 16% of total world exports.

### *Forecasts for the 1996-97 Season*

#### **Production**

At the end of May 1996, the world crop forecasts were estimated at 19.6-19.75 million tonnes (against 19.35 million tonnes in 1995/96 and 16.9 million in 1994/95). This would have made the 1996-97 crop the second best crop of all times, after the 91/92 crop. There was forecast to be an increase in the USA, decrease in China, stability in India and Pakistan and a slight decrease in Uzbekistan (1.22 million tonnes). This was all dependant on the climatic conditions and the problems of parasites. The most recent forecast (November) has subsequently reduced the harvest to 19 million tonnes, which is now less than last year.

#### **Consumption**

The ICAC, the USDA and Cotlook all predict that world consumption will increase by at least half a million tons in 1996/97, and for the first time be more than 19 million tonnes. In, particular, the decline of consumption in the countries of the ex-Comecon should stop, and consumption should start increasing again in these countries. Despite this, world stocks are predicted to increase by about 500,000 tonnes to reach around 8.5 million tonnes by August 1997. Stocks will therefore be over 40% on annual world consumption. China is estimated to hold almost 38% of world stocks of cotton.

#### **Exports**

For the season 1996-97, the ICAC forecasts that world exports will fall sharply to 5.7 million tonnes in 1996-97. This is less than 30% of the production and 650,000 tonnes less than in 1995/96. Uzbekistan exports are forecast to decline from 1.03 million tonnes to 980,000 tonnes. The most significant reduction in imports is to China. Turkey and Italy are foreseen as the only growth markets where cotton imports are expected to increase due to a rise in consumption.

## *Market Trends*

### **Production**

The latest Cotlook Production Estimates based upon information received in Liverpool by November 1996<sup>3</sup> forecasts a total world production for 1996/97 of 19 million tonnes, of which Northern Belt 16 million tonnes, Equatorial Belt 1.5 million tonnes and the Southern Belt 1.6 million tonnes. The production in Central Asia is forecast to be Uzbekistan 1.1 million tonnes (9% less than previous forecast), Turkmenistan 175,000 tonnes, Tadjikistan 105,000 tonnes, Azerbaijan 84,000 tonnes and Kazakhstan 65,000 tonnes. Uzbekistan is therefore the significantly largest producer in Central Asia

### **World Stocks**

The latest ICAC's assessment of the cotton world stock were 7,716,000 tonnes on 1st August 1995, and 9,389,000 tonnes on 1st August 1996. This is forecast to further increase to 9,991,000 tonnes by 1st August 1, 1997. The basis of this forecast is as follows:

Stock August 1996 (9,389,000 tonnes) + Production 96/97 (19,005,000 tonnes) = Supply 1996/97 (28,393,000 tonnes) - Consumption 1996/97 (18,403,000) = Stock August 1997 at 9,991,000 tonnes.

These latest figures show a significant increase in stock levels during 1996 which will continue into 1997. This is mainly due to a significant lowering in the forecast world consumption.

### **Pricing Trends**

After two seasons which have been more favourable to the producers than to the consumers, it is predicted that prices are more likely to fall than to rise. The ICAC projects an average of 74 cents per pound for the index A for the average campaign, that is 1 cent below the average of the last 15 seasons. The overall increase in stock levels and lower demand levels as indicated in the latest statistics would be expected to result in a weakening of selling prices paid to the producers.

## **2.2 European Market**

### **Production**

Europe is not a significant producer of cotton. The latest production estimates for European countries are shown in Table 2.

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<sup>3</sup> Cotton Outlook is published weekly. We obtained from a trader the issue of November 8, 1996. Cotton Outlook may be consulted on world wide web [http:// www.cotlook.com](http://www.cotlook.com)

**Table 2: Production Europe in 1000 Metric Tons**

<i>Country</i>	<i>1995/96</i>	<i>1996/97</i>
Greece:	443	325
Spain:	32	85
Turkey:	837	789
Total 3 countries	1312	1199
<b>World Total</b>	<b>19856</b>	<b>19005</b>

These 3 countries (Greece, Spain, Turkey) are the only important cotton producers in Europe. Their total production of 1.2 million tonnes only equates to the Uzbek production and accounts for only 6 per cent of the world production.

### Consumption

Europe is a significant consumer of cotton accounting for 14% of world consumption. The consumption by country is shown in Table 3.

**Table 3: Consumption Europe in 1000 Metric Tons**

<i>Country</i>	<i>1995/6</i>	<i>1996/7</i>
Turkey	820	853
Russia	368	386
Italy	372	385
Portugal	171	183
Germany	146	136
Greece	135	135
Spain	132	125
France	110	104
Poland	96	102
Czech/Slovakia	74	74
Romania	55	55
Switzerland	51	51
Belgium	42	40
Austria	40	38
Hungary	20	20
UK	17	16
Estonia	15	15
<b>Total Europe</b>	<b>2686</b>	<b>2741</b>
<b>World Total</b>	<b>18979</b>	<b>19464</b>

It can be seen that 60% of European consumption is in only three countries - Turkey (31%) Russia (14%) and Italy (14%). Approx. 42% of European consumption is in the EEC, mostly in the southern countries - Italy, Portugal, Greece and Spain. The only increases in consumption are in Italy and Portugal with a steady decline in other western European countries.

## Imports

Europe is a significant importer of cotton accounting for 36% of world imports. This is because of its high consumption and low production. Imports to European countries are shown in Table 4.

**Table 4: Imports in 1000 Metric Tons**

<i>Country</i>	<i>1995/96</i>	<i>1996/97</i>
Russia	500	415
Italy	381	390
Portugal	174	184
Germany	168	156
Turkey	50	151
France	135	124
Other Europe	431	430
<b>Total Europe</b>	<b>2176</b>	<b>2155</b>
<b>World Total</b>	<b>6222</b>	<b>5900</b>

It can be seen that whilst the largest consumer in Europe is Turkey, it is almost self-sufficient and therefore only has a small import requirement. 20% of European imports are to Russia. This is a prime market for cotton from the southern CIS and would not use TRACECA. The main importers of cotton in Western Europe are Italy (390,000 t), followed by Portugal, Germany, France. Other significant European import markets are the Czech and Slovene Republics (104,000 t), Poland (120,000 t) and Spain (81,000 t).

Europe is a major consumer market with rising consumption but lower import demand. This is because the spinning mill industry is in decline in Europe. The main reason is that the labour costs in Europe are becoming too high for the spinning industry. The above tables show that the only growth in Western Europe is in the southern countries where wage levels are lower. In the higher cost economies to the north - Germany, France, Belgium, Switzerland etc. - the import demand is falling as mills gradually close.

This situation is not unique. The situation is similar in the Far East despite overall growth in consumption. At present the big new markets for cotton importation are the countries of the Far East. The imports of the 7 biggest Asian importers are shown in Table 5 (ICAC, October 1995).

**Table 5: Imports in 1000 Metric Tonnes**

<i>Country</i>	<i>1993/96</i>	<i>1996/97</i>
China	600	450
Indonesia	510	541
Japan	357	320
South Korea	399	376
Taiwan	262	235
Thailand	375	388
Hong Kong	196	183
<b>Total 7 countries</b>	<b>2699</b>	<b>2493</b>
<b>World Total</b>	<b>6222</b>	<b>5900</b>

These seven countries import around 2.5 - 2.7 million tonnes per annum, and they are seen as the emerging markets (including Philippines, Vietnam and Malaysia). These seven countries import 15% more than the whole of Europe. However, the overall imports are also in decline, especially to the higher cost countries such as Japan, Korea and Taiwan, but are rising to the lower labour cost economies of Indonesia and Taiwan.

The overall trend is for demand for the importation of cotton to become more concentrated in the lower cost economies of southern, and possibly eastern, Europe. The main markets are expected to be Italy, Portugal and Turkey, where consumption will increase beyond local production levels. These trends should theoretically benefit both Uzbekistan as a producer and the use of the TRACECA corridor.

### **3. European Market Survey**

#### **3.1 Introduction**

The objective of the market research programme in Western Europe was to obtain a European perspective on the cotton market as a whole and specifically on the importation of Uzbekistan cotton. The following organisations were interviewed:

- AFCOT in Lille, France
- Compagnie Cotonnière (COPACO) in Paris, a subsidiary of Compagnie Française de Développement des Textiles (CFDT) in Paris, France
- Donovan in Geneva, Switzerland, a subsidiary of Donovan, Memphis, USA
- Glencore and Grains in Rotterdam, Netherlands
- Louis Dreyfus Cotton International in Antwerp, Belgium
- Meridith & Jones Ltd in Liverpool, England
- Ralli Brothers and Co, in Liverpool, England (a subsidiary of Cargill, USA)
- Reinhart in Winterthur, Switzerland
- SIC in Le Havre, France
- Stahel Hardmeyer Ag, in Zurich, Switzerland

Meetings were also held with CFDT in Paris and M&M (Militzer & Münch) in St Gallen, Switzerland.

The cotton traders indicated above are based in Europe but are international cotton traders whose activities are not limited to Europe. They are among the biggest cotton merchants in the world, and together they are estimated to purchase more than two thirds of the total cotton exported from Uzbekistan. Most of these organisations have permanent representatives based in Uzbekistan because it is the second largest exporter of cotton after the US. The companies interviewed have significant contracts with Uzbekistan consisting of large shipments cotton, usually in the form of a “master” contract. A contract is seldom for less than 10,000 tonnes and contracts for over 100,000 tonnes are not unusual. The Uzbekistan representatives of most of these organisations were also interviewed as part of the local research reported in Section 4.



### 3.2 Buying Terms and Transport Criteria

In Europe, the trade of cotton is carried out by "merchants of cotton" who buy and sell cotton world wide. These merchants or cotton buyers purchase the cotton, receive it from the sellers most often in ports, and then arrange shipment from those ports to the final delivery points, the spinning mills.

*The role of the merchant is as follows:*

- the merchant buys the cotton from the seller, at the place where the seller is located (in Uzbekistan, the seller is the Government). The "place of sale" is the origin, usually the ginnery
- the cotton is sent by the seller to the "place of collection", generally a port in Europe referred to as the "port of shipment". This transport movement is known as primary distribution
- the merchant receives the cotton at the European port in bulk form. He purchases it on FOB (Free-on-board) terms and despatches it forward in containers or in bulk from the "port of Shipment" to the destination port (nearest to the end-user) or occasionally sends it forward by truck. This activity is known as secondary distribution
- at the " port of shipment", the merchant retains stocks of cotton in special warehouses. He delivers it only when the client needs it, usually on a Just-in-Time basis
- the seller is responsible for the transportation up to FOB port of shipment - primary distribution
- the merchant is responsible for the transportation from FOB port to final delivery point (spinning mill) - secondary distribution.

*The transport criteria on behalf of the merchant are the following:*

#### Price

The merchant buys FOB European port and sells "franco domicile" or free delivered customer warehouse. He is responsible for arranging and paying for the transportation from FOB at the port of shipment through to the spinning mill. This includes the containerisation operation and all the secondary distribution transport operations up too the final delivery. The merchant attempt to maximise his profit on the sale which is the "price of selling to final client, minus his expenses all along the transport chain". He is therefore particularly interested in minimising the secondary distribution costs.

#### Port Facilities

Cotton merchants require certain facilities at the port of shipment where he receives the cotton from the seller. These are as follows:

- modern warehouses with sortation facilities and fire prevention systems

- shipping companies able to provide regular services with vessels equipped to receive containers
- container handling facilities (forks lift trucks, straddle carriers etc.)
- good access from home office to port (regular flights, short flight duration, telecommunications)
- suitable accommodation in vicinity of the port (hotels)

### Shipping Services

The merchants require regular lines to as wide a range of European and world ports as possible. This is important so that they are able to ship direct to the customer destination, rather than having to tranship at another port. The more shipping services the better because competition results in rate flexibility and the ability to negotiate special contract prices. They are also interested in the quality of the carrier and capacity of their vessels.

### Modal Flexibility

The merchant prefers to have some degree of modal flexibility. For example, to serve Western Europe from Riga, it is possible to use either sea and truck transport for secondary distribution, depending on the destination and the price conditions. Conversely from Ilyechovsk, it is only possible to use sea transport because Odessa is too far from Western Europe to be reached easily by truck.

### Port of Shipment

The merchant has limited interest in the transportation to the port of shipment. The costs are paid by the seller up to this point. As long as he would be certain that quality and weight of the cotton he receives can be ascertained, he is prepared to consider any of the main routes. His main interest is in the facilities of the port and the service level that it can offer when the goods physically arrive.

## 3.3 Costs

The value that can be obtained for cotton fibre at a given time depends on:

### a) Quality Criteria

- the quality or grade<sup>4</sup> which depends on the cleanness (content in impurities), on the colour<sup>5</sup> and on the preparation
- the length or "silk" expressed in English measures based on 1/32 of inch<sup>6</sup>

<sup>4</sup> By order of decreasing quality or grade: GM (*Good Middling*), M (*Middling*), SLM (*Strict Low Middling*), LM (*Low Middling*), GO (*Good Ordinary*)

<sup>5</sup> From *white* to *gray*, passing through *light-spotted*, *spotted*, *tinged*, *yellow stained*, and *light gray*.

- technological characteristics (uniformity, thinness or micronaire, resistance, tenacity, stretching, maturity, etc.)

**b) Subjective Factors**

- competency and professionalism in terms of classification and sales
- brand image and notoriety of the fibre
- nature of the trade relation between the seller and the buyer (faithfulness to one origin and one proven supply chain)

**c) Market Factors**

- the respective situation of the stocks of the producer and of the buyer,
- transactions of a speculative or compensatory nature (such as barter agreements)
- necessity to cover uncovered positions

**d) Cotton Prices**

There are large differences in prices according to the various types of cotton. An average price is 1,500 USD per tonne. The CIF North Europe Quotations for Principal Growths (quotations as at November 7, 1996) were the following, for some origins (in US cents per pound):

American - Type cottons: 77.50 - 86.75, depending on the quality

Mexican: 79.00

Argentine: 72.50 to 74.50

Turkish: 73.00

Central Asian \*Midd 1-3/32: 71

Uzbekistan cotton does not command a premium price and, in reality, is selling below that of cotton sourced from other markets.

**e) Transport costs - Uzbek Cotton**

The estimated prices for transportation of Uzbek cotton indicated by the merchants was 75-100 USD per tonne for the primary distribution from the ginnery to the port of shipment, paid by the seller, and 100-120 USD per tonne for the secondary distribution to the end-user.

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<sup>6</sup> Short silks: 3/4" to 31/32" - Average silks: 1 inch to 1"3/32 - Long silks 1"1/8 to 1"7/32 - Extra long silks: 1"1/4 and more.

### 3.4 Logistics for moving cotton

The following main alternatives are available for shippers moving cotton from Central Asia to Europe:

- rail shipments via the Russian railroad system to St Petersburg, Riga or other Baltic ports
- rail shipments via the Russian railroad system to Ilyechovsk
- rail shipments via the Transasian Railroad to Mersin and Bandar Abbas
- truck shipments to Mersin or Bandar Abbas
- rail and truck shipments via the TRACECA route to the port of Poti in Georgia
- rail and truck shipments via ferry to Baku, and then routed northwards through Russia to Europe
- water transportation from the port of Turkmenbashi through the Volga-Don Canal to the Black Sea and the Mediterranean Sea

#### Baltic Ports

The largest volume of Uzbek cotton to be sold in Europe is bought FOB Riga in Latvia. Smaller shipments are also obtained FOB at other Baltic ports, mainly Ventpils in Latvia, St Petersburg in Russia and Klapeda in Lithuania. There are small shipments from Ilyechovsk, near Odessa in the Ukraine on the Black Sea.

The traders buy the cotton where the Uzbekistan seller delivers the shipment. These ports are the traditional ports which are perceived to be well organised with an adequate supply of regular shipping lines. Most traders on-forward the shipment from these ports of shipment in containers to the end-user. Riga is considered to be the best port because this is the most direct route to northern Europe (through Kazakhstan, Russia, Latvia). It is a traditional cotton port and therefore the merchants have established facilities with good warehouses manned by experienced controllers, classification personnel, hotels, good access and reliable employees. The traders indicated that there is good wagon control from the departure point in Uzbekistan through to Riga.

Access to shipping lines is critical. All the major shipping companies are calling at the port of Riga - P&O, Maersk, Sealand, Evergreen, etc. For shipments to the Far East, the trader books the shipping company and the company provides a Bill of Lading from the point of departure to the final destination port. Many of these services are feeder services with a transhipment in either Hamburg, Rotterdam or Antwerp but they are carried on through Bills of Lading and service level is not affected. From Riga it is possible to ship cotton to almost any of the main cotton destinations.

#### Riga Port

Despite the fact that Riga is the most used port, there are some problems. These are as follows:

- the specialised cotton warehouses are currently full. Alternative warehousing was available but Uvneshtrans refused to approve delivery
- lack of storage is leading to delays and demurrage costs
- Riga is considered an efficient port when compared with either St Petersburg or Ilyechovsk but is not to the standard of western ports, although there is some gradual improvement
- “organised crime” control certain aspects of the activity leading to increased payments and lack of flexibility. This is a problem throughout the CIS and is more limited at Riga than at either St Petersburg or Ilyechovsk.

### **Ilyechovsk Port**

Ilyechovsk is used as the main cotton port to the Mediterranean region. As indicated, Italy is the largest market in Europe and it is cheaper to ship from the Black Sea ports to Italy (40 USD per tonne to Trieste or Venice). Riga is served by “short sea” or feeder vessels which provide a “deep-sea” service capability with transhipment. It lacks services to the “middle distance” such as to the Mediterranean and therefore Ilyechovsk is better positioned. It should be noted that many of the Italian shipments are carried in specially chartered vessels and thus distance is a factor in costs. Ilyechovsk is also the export port for cotton to Turkey, where Mersin is an important cotton centre.

### **Bandar Abbas**

Bandar Abbas is becoming more popular, since the new rail line of about 60 km between Sarakhs and Mashhad was opened between Turkmenistan and Iran. Bandar Abbas is considered by the merchants to be a convenient port, especially to send cotton to the Far East. Cotton from Turkmenistan is currently being sold ex-works and being carried by rail wagon from Ashgabat to Bandar Abbas. Cotton from Azerbaijan is usually routed through Astara to Bandar Abbas. Theoretically, the Uzbekistan cotton could also be routed via this corridor. Most shipments from Bandar Abbas transit Dubai from where there are regular services to almost all the main cotton destinations.

Merchants have noted some problems in moving the cotton by road to Bandar Abbas. Iranian transport law forbids trucks above 34 tonnes gross weight, whereas Uzbek trucks normally carry 41 to 42 t. The 6-7 tons has to be removed to comply with these regulations. Trucks over 16 meters are also not permitted and most Uzbek trucks are 16.5 meters long. The result is that the Uzbek road carriers demand a premium, thus making this method uncompetitive. Bandar Abbas had only received 20,000 tonnes of Uzbek cotton by the beginning of 1996.

### **Traditional cotton export routes**

It is recognised that the existing system is partially based on historical logistics whereby it was the Soviet Union, with the Soviet system. Cotton was sent to Europe from the Baltic ports or from Ukraine. These were the designated ports and transportation costs were not a factor in a centrally

planned economy. Another important route was by rail along the land corridors to Europe, via Cop at the Hungarian border or Brest Litovsk in Belarus. These routes are still in use to carry cotton towards Central Europe, though volumes to these markets have declined. The port of Nahodka, in Eastern Russia was also used for Far East cotton shipments and is still used today due to its proximity to both Japan and Korea who are significant importers.

### Uzbek cotton destinations

Merchants indicated that, in general, there is no special allocation of Uzbek cotton to specific destinations. The destination depends on the quality required by the end user and not on the origin. They send Uzbek cotton to the same places as they would send cotton from any of their other sources. Depending on the trader, Uzbek cotton goes mainly to the Far East or to Europe. A small proportion goes to South America (Brazil). Certain traders specialise more in some markets than others as shown in Table 6.

**Table 6: Merchants Sales by Geographical Area**

<i>Merchant</i>	<i>Far East</i>	<i>Europe</i>
Copaco, Paris	60%	30%
Sic, Le Havre	25%	75%
Devcot, Lille	75%	25%
Louis Dreyfus, Antwerp	20%	80%
Donavan, Geneva	70%	30%
Ralli Brothers, Liverpool	60%	40%
Stahel Hardmeyer, Zürich	50%	50%
Reinhart, Winterthur	20%	80%

### Cotton distribution

The traders indicated that they do not expect major changes in distribution in the near future. They note that the Uzbekistan Government intend to ship part of their cotton through Poti or Batumi and the strong development of the ports of Bandar Abbas and Mersin. They indicated that the Uzbeks are more willing to ship cotton ex-works from Uzbekistan rather than FOB, especially when the cotton is sent to Bandar Abbas, because of the difficulties of transport through Iran.

The normal secondary distribution time - from the port warehouse to the end-user - is one month minimum, with one and a half month as standard. It can take more time to the Far East if transshipment is involved. Most contracts to the Far East are CIF and not free delivered spinning mill as in Europe.

Several traders complain about abnormal delays in delivery of Uzbek cotton (wagon blocked or not unloaded for several months). They perceived a gradual deterioration in the quality of delivery of Uzbek cotton with average transit time tending to increase. They also complained about delays in port operations (unloading, quality grading, reloading, etc.).

### **3.5 Quality Issues**

#### **3.5.1 Grading**

There are significant problems regarding grading or classification of Uzbekistan cotton. This is because the initial classification is undertaken in Uzbekistan according to Uzbek standards. This does not satisfy the requirements of the traders, who must check some important parameters, such as the micronaire (resistance) and the maturity (press lay) that the Uzbeks cannot measure accurately due to the lack of adequate instruments. These parameters are needed by the end-user (the spinning mills) who cannot buy qualities of cotton that do not fit their machines. Traders overcome this problem by having to re-classify the cotton with independent classers, usually at the port of shipment.

#### **3.5.2 Damage**

Damage is another problem area. The bales are often damaged or rotten in the country of origin due to humidity, poor storage conditions and transportation in damaged wagons. Damage can often occur prior to leaving the ginnery but only become evident when it reaches the end user. This is due to the sampling method as the sample is only 200 grammes out of a bale of 200 kilos, and samples are taken from one bale out of ten, which means that the sampling is 1/10.000 of the original weight. There is therefore little chance to discover partially rotten bales before they are unbaled at the delivery point. The reason for such a limited sampling is the cost. It is considered to be less costly to pay for the possible damages at the point of arrival, if it occurs, than to introduce more controls at the collection point. When there is damage, the trader addresses his complaint to the seller in Uzbekistan.

### **3.6 Containerisation**

All traders reported that the primary distribution of cotton up to the port of shipment was in bulk. No containerisation is currently taking place at the cotton source. They confirmed the use of containers in secondary distribution when they on-carry the cotton from the port of shipment to the end-user. They normally tend to use 40ft units because of the better loading characteristics. The standard load is 22-24 tonnes consisting of 110 bales depending on stowage. The 20 ft containers

are less used and carry 11.5-12 tonnes. It should be noted that 40ft containers are more common in the Far East container services, whereas 20ft are more common on most other trades.

It was noted that the cotton bales from Central Asia are considered to be the best bales to go in containers because of their size and weight. The standard Central Asian bale size allows a loading of 105 to 120 bales to a 40ft unit which gives a average payload of 22 to 25 tonnes. The standard American bale size, for example, allows only 80 bales or 18 tonnes per 40ft container, which means that the freight from Central Asia is 25% cheaper than from the USA on comparative sea routes.

Some traders expected the proportion of containerised cotton shipments to increase. For example, they consider that there will be a change at Ilyechovsk from bulk shipments in charter vessels to containers when the port has the appropriate lifting equipment. Most merchants believe that organising containerisation from the origin will be very difficult and that in the end it will be more expensive to receive containers from the point of origin, rather than to receive the cotton in bulk in the port of shipment.

Merchants indicated that if the cotton were ever sent to Poti directly in containers from Uzbekistan, then there would be no grading in Poti, as the classification would have to be done at the place of origin. One basic principle is that a container should be sent from origin to final destination - door-to-door- without being opened during the trip. Unless this equipment could be met, they were not interested in containerisation. This will require improvements in classification at the point of origin, as compared to the current situation. All merchants were concerned about the reliability of the quality control aspects.

A number of suggested conditions were proposed which would make them more attracted to the use of containers. These were as follows:

- The trader buys the cotton delivered in containers in the spinning mills - i.e.: free delivered terms. The trader would then not be responsible for primary or secondary transport. Most traders doubted whether the Uzbek seller would accept such a proposal given that the Uzbeks are seen as trying more to sell the cotton on an ex-works basis
- The trader buys the cotton on an FOB Poti basis even though it is a through door-to door shipment. The splitting of costs on door-to-door shipments based on different selling terms is undertaken in developed transport environments, but may be difficult in this case as one party would have to pay and recover from the other
- The trader buys the cotton in Uzbekistan on an ex-works basis as desired by the Uzbek seller. The traders are not enthusiastic about this solution, because they would then have the responsibility for moving the cotton from Uzbekistan to the port of shipment. They regard this primary distribution as a difficult and hazardous operation under present circumstances. To accept this solution, they would have to clarify their relationship with the seller. This requires the Uzbek seller to accept the real meaning of ex-works contracts, which implies that the trader has



total freedom for the shipment of the cotton and the choice of the mode and conditions of transport. This is not the case now where Uzvneshtrans have a monopoly and are able to dictate conditions.

### 3.7 Use of Poti

All the organisations contacted were requested for their views on using the TRACECA corridor and the port of Poti.

The Government of Uzbekistan through their selling organisation proposed to major traders to purchase their cotton using Poti. Most of the merchants refused because they were not attracted by the conditions set for various reasons:

- Poti is not considered to have adequate security
- the route traverses through unstable countries. They wrongly indicated that they thought Georgia was almost in a state of war and that the inhabitants are armed
- there are problems of insurance making it difficult to obtain adequate cover for warehoused cotton
- Poti has a reputation for organised crime
- there is no serious controller located along the route
- during the war in Chechnya, there were a lot of restrictions on rail transport in the Caucasian Republics
- there are no regular shipping companies coming to Poti (liner vessels).
- they are unfamiliar with this route and they have established operations on other routes

One trader noted that the best proof that Poti is not attractive was that even Azeri cotton does not leave the country for shipment through Poti. This demonstrates problems in using Poti. Most merchants showed no interest in using Poti unless it were cheaper, in which case some of them would be ready to take risks.

Recent press articles have also mentioned that there are some infrastructure and capacity limitations affecting the TRACECA route. The capacity of the Turkmenbashi to Baku ferry service was reported as limited and an extra ferry, dedicated to rail car shipments, is a necessity. The ferry terminal at the port of Turkmenbashi was indicated as being in an unsatisfactory physical condition and requires reconstruction of loading ramps and berths to accommodate the increased rail car traffic. Moreover, the terminal has a limited rail car handling and storage capacity.

Whilst it is accepted that not all of these comments are correct, it is important to acknowledge that market perceptions, right or wrong, influence decisions. The merchants, as the buyer, have influence which could increase in an environment where stocks are increasing and consumption falling.

Specific interviews were conducted with the emphasis on what they considered would need to be done to make the TRACECA route and Poti more attractive. Some of the traders clearly indicated that they would not use Poti under any circumstances, whereas others took a more pragmatic approach. In order to make this route attractive, the traders make various suggestions :

- a reduced price for using Poti to allow for the extra risks and secondary distribution costs. 10% was indicated as a suggested level that might be attractive
- establishment of professional cotton controllers in Poti
- good warehousing
- insurance cover
- regular shipping lines
- good local facilities for staff based there and representatives visiting for inspection purposes (hotels, housing, human aspects).
- classification services

It is clear that the European cotton merchants are not currently attracted to using Poti and the TRACECA corridor. There are significant credibility problems which will need to be resolved if the Governments are to fulfil the agreements signed in May 1996 to increase the shipments via the Georgian ports.

## **4. Uzbekistan Survey**

This section examines the environment in Uzbekistan and at selected points along the TRACECA corridor. The Consultant's project team has travelled along the whole corridor from Uzbekistan to the Georgian ports. The information is based on interviews with the main organisation concerned with the buying and transportation of cotton and site visits to loading points and Poti.

### **4.1 Market profile**

Over 3 million tons of raw cotton is gathered in a good year from all 12 regions of Uzbekistan. This is ginned (processed) to produce 1.25 million tons of cotton lint, of which 1.15 million tonnes is then exported. In addition there are also linters (short fibres used in cotton wool and banknote production), seed (for oil) and cotton waste. All these are saleable but cotton lint is the most valuable.

For every 100kg of raw cotton, it is possible to produce 32kg pure fibre, 54 kg of seed and 14kg of linters, motes and waste. 240 bales of pure cotton represent one "Mark" which is equivalent to one wagon load of 45-56 tonnes depending on the difference between gross weight and the conditional weight based on humidity and ginning quality.

This year due to adverse conditions the yield is expected to be low at an estimated 1.02 million tons of lint, of which 0.94 m will be exported. This local forecast is lower than that of the latest Cotlook Production Estimates. The income generated from the export of cotton is important to the economy of Uzbekistan. The current instability in the value of the Uzbek currency relative to the US dollar is, in part, related to concerns regarding lower income generated from cotton exports due to the poor harvest.

Following harvesting, the cotton is processed at the ginneries (cotton processing plants) and dispatched against purchasing orders. The cotton is normally sold on a FOB (Free-on-Board) basis and it is therefore the responsibility of the Uzbekistan seller to transport the cotton to the port of shipment. This is normally undertaken by despatching the cotton by rail wagon to the special storage facilities located at the Baltic and Russian Black Sea ports - mainly Riga, St Petersburg and Ilyechovsk.

The better quality grades sell more quickly than the lower grades, which are less in demand and incur longer storage times. Depending on the market price, it is possible that a crop is not sold in the year of harvest. It is reported, for example, that the storage in Ilyechovsk and Riga contains many thousands of tons of cotton purchased by traders but which has not yet been sold to the end-users as they are waiting for the price to rise. This is a common practice with cotton, which is a product trading on the international commodity market.

As indicated in Section 2, Uzbekistan is the second largest exporter of cotton after the USA. Unlike some of the other countries, they have no significant spinning or cloth making industry which would provide “added value” to the product. Japanese and Korean companies are appraising this situation for possible future investment in production units, supported by the Government, so that in future the crop will be even more valuable to the country. However, in the short term Uzbekistan will still be reliant on export of the cotton lint, linters, seed and waste which account for over 75% of national export earnings.

## 4.2 Identification of Sellers and Purchasers

### *Sellers*

The sale of cotton in Uzbekistan is undertaken on behalf of the Government by the Ministry of Foreign and Economic Relations (MFER). Selling is controlled through a quota system for cotton exports. It is assumed that this methodology is used in connection with the price on the world market to maximise earnings and also as a mechanism for the control of foreign earnings. It is not used to protect the local cotton industry, as this only processes about 200-250,000 tonnes of fibre.

Within the MFER, there are 3 separate organisations with whom the cotton buyers are required to negotiate:

- Innovatsia (Innovation)
- Uz Prom Mash Imp Ex
- Uz Markaz Imp Ex (Uz Central Import/export), previously called Uz Agri Impex

Uzhlopkopromsbyt (UZH) is a joint stock association under the Ministry of Industry and has been given a monopoly on the purchase and ginning of cotton and the collection from the ginnery for export. The movement from the ginnery to a port of sale is also the responsibility of UZH.

### *Purchasers*

There are seven major purchasers or cotton traders active in the Uzbekistan cotton market. These are as follows:

- Daewoo
- Donovan
- Ralli Brothers & Coney (A Division of Cargill PLC)
- Meridith Jones
- Glencore
- Reinhart
- Louis Dreyfus

It is estimated that Daewoo, Donovan and Ralli buy 60% of the total Uzbek cotton exports.

Daewoo Corporation bought up a local cotton trader 5 years ago and they now have their own cotton trading company. They have recently undertaken a 1,000 tonne test shipment via Druzhba using containers to the Chinese port of Lianyungang. The end customer was not revealed, although Korea are known to be large end-users. However, this movement may just be to the Chinese port, at which point the containers were unloaded and the cotton sold FOB the port.

Daewoo is not a standard cotton purchaser in that they are a large industrial conglomerate with a wide range of interests. They have established a major car manufacturing facility in Uzbekistan and are generally considered to be in a privileged position and able to obtain special arrangements. They have been promised by the Government 100,000 tonnes of cotton which will be supplied from up to 5 areas, including Bukhara. This purchase could help to return 3,500 TEU (20 & 40 ft containers which are currently held in Asaka (Fergana valley, 1,000 km from Bukhara) to Korea. They anticipate importing 8,600 TEU a year of car components to their factory in Asaka and this represents 103,200 tonnes of cotton as a backhaul at 12 tonnes per TEU(20ft Equivalent Unit).

Daewoo is known to be negotiating for an additional 200,000 tonnes of high grade cotton, if it is available. If confirmed the shipments would be expected to move via Druzhba, thus reducing the potential level of shipments westwards using the TRACECA route in the short term.

### **4.3 Terms of Sale**

The normal method of purchase is that the cotton traders negotiate with the Ministry of Foreign and Economic Relations under the quota system and a purchase is agreed based on the various different classes of product. A Letter of Credit is raised and issued with payment to be made FOB the selected seaport.

The sale is initiated on the basis of the Certificate of Quality issued at each ginnery in Uzbekistan. However, as indicated later, this system is not considered to be sufficiently reliable and a recognised classification company is usually required to make independent checks prior to confirmation of sale. If the quality is not found to be the same as sold when checked, a different (often lower) price is negotiated for the grade/class and only the tonnage loaded onto the ship is paid for on the Letter of Credit. This independent check can be undertaken in Uzbekistan, but is normally undertaken at the seaport or, on occasions, in both places. The “drawdown” on the Letter of Credit is not effected - i.e.: money transferred from the buyer to the seller - until the classification has been agreed between the parties.

#### 4.4 Classification and Pricing

There are 5 Uzbek cotton standards, each subdivided into 5 “qualities” that also relate to fibre staple length. These standards have been accepted by the most of the key European markets. However, many other countries have their own standards or prefer the American USDA standards that have 7 grades from Good Middling through Middling and Strict Good Ordinary to Below Grade. These are then further divided by colour from White through Spotted to Grey. The equivalent grade to “Middling” now sells for about 1,400 USD per tonne on the world market. Due to inconsistent quality, Uzbek cotton sells for 10-12% less than the equivalent grades on the world market. The lowest grades sell for about 1,000 USD per tonne.

There is a Decree from the Government of Uzbekistan which states that “there will be no rejections of grade once the deal has been struck”. This is not agreed by the buyers because they, rather than the Government, have to pay any compensation to their customers for incorrect classification or supply of sub-standard cotton.

As indicated, the original classification undertaken at each ginnery in Uzbekistan is based on country supplier standards but this is not always to international standards. As a result the buyer usually re-checks the consignment at the port to final buyer standards. There is significant re-classification of product, usually downwards, from the original classification made by the ginnery. The disputed classification is usually settled using the International Liverpool Cotton Exchange rules. The Buyers tend to purchase from specific regions in specific classes. It can be seen that the final agreement on class, and therefore sale price, is usually far from Uzbekistan and that the Government therefore has limited direct control over the classification or final price obtained.

Wakefield (UK) and SGS (Switzerland) are the main independent classification organisations who provide a service to buyers throughout the world and are established at the key cotton ports. If there is any doubt about a classification, they even check work done by others to ensure that quality is maintained on behalf of the cotton end-users. They normally have their own laboratories for testing. Some of the buyers have their own classification personnel who visit the ports to inspect the cotton prior to confirmation of a sale.

Some training of classification staff in Uzbekistan has been undertaken, particularly by Wakefield who have trained 40 “classers”. However, there are 135 ginneries in Uzbekistan and therefore there are insufficient trained personnel. Additional problems are that even those trained lack long-term international experience and may not always be considered to be totally independent, given that classification affects the agreed price.

#### 4.5 CIS Logistics

As indicated in Section 3.2, the cotton is sold FOB and therefore the responsibility for the movement of the cotton from the ginneries to the seaport lies with the seller. This is undertaken on behalf of the MFER by Uzgoshlopkopromsbit (UZH).

All local transport costs are paid in local currency sum by UZH. This is creating some problems as the spare parts for trucks, diesel powered front loaders and machinery have to be paid for in hard currency. The handling systems are deteriorating with local loading equipment being cannibalised to keep at least some units working and attempts being made to make some spare parts locally.

The ginneries require massive investment to bring them up to modern international standards. There are currently 135 ginneries located in the 12 regions. Although they are worked all year to provide full employment, they are operating well below capacity. For example, in Australia 8 ginneries that each employ 10 people bale 1 million tonnes in 5 months. In Uzbekistan there are 400 people per ginnery and they operate all year to produce 1.5 million tonnes in a good year. This low productivity will present increasing logistical problems of not having the product in the key locations in a timely manner for onward shipment.

There is a significant packaging problem. Investment is required in modern packing facilities so that the bales remain intact, are less prone to moisture ingress and are kept cleaner. The variation in quality between bales also remains unacceptable due to poor classing, the volume of bales that are physically classed (said to be as low as 50% before despatch) and poor ginning.

The Uzbek seller is responsible for the packing, delivery to seaport and any charges for loading on ship, plus export customs clearance and documentation charges. These costs are dealt with through Uzvneshtrans (UZV). UZV are also responsible for any damage in transit, insurance and disposal of unacceptable bales (through dirt or damage, often caused by the bales falling apart in transit).

The cotton is normally loaded in covered rail wagons with a capacity of approximately 50 tonnes per wagon. Due to the poor condition of the wagon and the risk of spontaneous combustion when cotton becomes damp, it is necessary to line the wagon with kraft paper and seal the openings. These costs are in addition to the rail charges. The packing of the wagons is undertaken by experienced local labour who maximise the load by manually handling the bales to ensure a compact stow. Unfortunately, the labour at the receiving port is less experienced and, with settlement during transit, the wagon is difficult to discharge without damage to the bales. Poor packaging adds to the problems and there can therefore be significant cargo damage on receipt at the port warehouse. It is estimated that damage in transit is 5-10% by weight (UZV). Damaged bales and loss is the responsibility of UZV and their insurers.

In the main ports, such as Ilyechovsk and Riga, there are specialised secure warehouses which are rail connected and are fitted with alarm systems and water sprinklers to prevent fire. This is important because fire is a constant hazard in the storage of cotton because, as indicated, when damp, cotton can generate an exothermic reaction and self ignite.

From these ports cotton can be finally “classed” (graded), or the class checked to ensure conformity, using the laboratory services provided. It is then purchased FOB by the buyer who despatches the cotton by either chartering a vessel or using a “liner”(scheduled) shipping service. In the latter case there is a probability that the goods will be containerised for delivery through to the end-user.

Although most cotton is forwarder to the seaport by rail, some shipments are sent by road. There is a trade imbalance between Iran and the Central Asian Republics. This results in significant numbers of trucks travelling southbound in empty condition. The road hauliers are sometimes using cotton as a backhaul to Bandar Abbas. This is uneconomic in terms of the use of available space but is better than returning empty trailers as there are limited alternative traffics. The problems of moving cotton by road to Iran were described in Section 3.4.

#### 4.6 Shipments via Poti

The initial purchase order for the trial tonnages through Poti (as a result of the meeting in May 1996 between the Presidents of Uzbekistan, Azerbaijan, Turkmenistan and Georgia) was made in Tashkent and the terms of payment were by Letter of Credit (L/C), FOB the port. To date the main shipments via Port have been to Trieste in Italy and to Brazil.

UZV are responsible for all the movements from Uzbekistan to Poti by rail wagon. A certificate is issued at each ginnery for each bale and the bales are moved to a loading site. At Kutcluk (see photo) 5 ginneries, within 40 km, deliver their cotton for loading onto rail wagons by truck or tractor. The rail wagons are very old (30-40 years) and in poor condition and have often been patched on the inside to seal them against drafts, sparks and water ingress when used for cotton. They use Kraft paper and glue to seal the offside doors and all ventilators (see photos). No dunnage is used to provide separation between bales and the cotton is tightly packed (see photo).

After loading, the rail wagons loaded with cotton are ready for movement and the Uzbekistan Railways notify Rustam Tashbulatov, and his team, in Tashkent(UZV). They then notify GTE in Poti the wagon numbers, departure date and bale code details. Details of what is received in good condition are faxed back. On the shipments checked there were no lost wagons.

Transit times vary between loading in Uzbekistan and arrival in Poti from 10 to 20 days depending mainly on transit across the Caspian Sea. The first shipment of 2,000 tonnes in May 1996, that followed the meeting of the four Presidents took 8 days. However, this was a trial shipment where all the parties were pre-advised of the shipment and to expedite the transit. There were no reported



delays due to documentation problems. In general, 20 days is acceptable as the buyers are in no hurry at this stage. Cotton will normally be stored for between 20 and 45 days in the warehouse in Poti waiting for a vessel and for a good price for the cotton.

GTE in Poti can theoretically store up to 10,000 tonnes of cotton in an old tea warehouse complex. There are 4 warehouses but these are in poor condition and they have no fire protection system. There is an additional capacity for a further 5,000 tonne inside the port under similar poor conditions. GTE consider they need at least 30,000 tonnes of warehouse storage and are considering how best to obtain suitable storage facilities. None of these facilities is comparable to those at Ilyechovsk or Riga.

The rail wagons go direct to each warehouse and are unloaded by small diesel powered front loaders that take one bale at a time (see photo). Railways allow 24 hours to unload, then require the wagons to be returned to them. Cargo for Uzbekistan is sought but at least 50% of the wagons will return empty. It is understood that to date none of the wagons has been returned to Uzbekistan. The current logistical system is not planned in that Uzbekistan is sending too much cotton at one time and therefore exceeding the storage capacity of 15,000 tonnes. The result is that significant demurrage on rail wagons is being incurred.

Each wagon was sealed on departure from Uzbekistan and these seals are checked by the Chamber of Trade in Poti, who act as independent assessors. They tally the documents with the cargo manifest (often this is incorrect), spot check the weight of some bales and the bale numbers and record damage in transit. Sometimes the damage is so great that they consider the damage was incurred prior to or during loading, although but this could not be verified from the loading records.

Each wagon load is placed in the warehouse on a separate stack as each wagon will have come from a different ginnery and therefore contain cotton from a specific area. These stacks are checked by the buyers at the port and from here the bales to be loaded are selected. When sufficient cotton is in stock, Ralli (who are now buying 20,000 tonnes) or Glencore (17,000 tonnes) charter a vessel when they consider the time/world price is right to move the cotton to Francesco Parisi in Trieste for classing, storage or movement to their customers in Europe on a JIT (Just-in-Time) basis.

One vessel in Poti 15 Nov. was the bulk carrier Nadezhda ("Hope") with a capacity of 1,800 tonnes being loaded with 6 or 8 200 kg bales per lift (approx. 1.4 tonne) by a 10 tonne capacity crane that loads a maximum of 500 tonnes per day. The bales are packed in the bulk hold of the vessel and kept off the sides of the hold with wooden dunnage to prevent the bales rubbing together (see photo). It takes a minimum of 4 days to load the vessel but the ship's loadmaster indicated that it can take up to a week. The overall performance of the port is considered to be poor and on the day prior to the visit only managed 70 tonnes. Comparative performance at Ilyechovsk was indicated at minimum 500 tonnes per day up to 800 tonnes per day.

The port is a multi-purpose port and is perceived as having a poor reputation for service and management control. Two berths are known to be used for cotton but without dedicated and managed loaders their productivity is low. The following were the key constraints indicated by the buyers and the Uzbek representative:

- The control over port labour is poor. There is a plan to provide a dedicated team of workers for the loading of cotton but this is dependent on prospects of additional cargo
- There is no dedicated cotton berth. Operators want to lease Berth No 9 so that equipment can be made ready for a faster turnaround of the vessel. Under their control, GTE consider they could increase capacity from a maximum of 135,000 tonnes per year to 400,000 tonnes, mainly by gaining management control of the work force and improved operational planning.
- There are regular power failures in Poti. This is a problem throughout Georgia and no early resolution can be expected. The power cuts come without warning and can last several days. There is a standby generator that produces 1.2 MW to enable the cranes to continue to operate. However it consumes 1 tonne of diesel per hour and fuel is not available. The port has insufficient resources to purchase fuel owing to debts on past services.
- The 24 hour operation in the port rarely exceeds 16 hours in practice due to poor management control and working practices.
- Surveyors from insurance companies are not satisfied with the quality of the cotton warehouses, the general cleanliness and the lack of fire prevention measures in Poti thus creating insurance problems. The 56 ton of loose cotton, damaged in transit and lost in the fire at Poti in October 1996 was worth over \$67,000 and its loss is likely to result in increased insurance premiums.
- There are insufficient numbers of front loaders available for operation in the warehouse (GTE are expecting 8 more in Dec. 96). There is also a general shortage of fuel for the handling equipment.

No arrangements for dealing with damaged bales at Poti has yet been formulated. Damaged bales at the loading points is sold at a low price to local spinners. There is a plan to let Georgia have 2,000 tonnes per year of cotton under favourable terms for its own spinning mills and it is thought that damaged bales at Poti could be involved in this arrangement. GTE have indicated that they are interested in setting up yarn and cloth production in Georgia.

The German company, Cargo Control, along with Wakefield and Glencore, plan to open a joint office in Poti by the end of December 1996. This will enable classification to be undertaken in Poti, whereas it is now undertaken in Trieste for European shipments. Trieste is a "free port" skilled in classing that offers "free" storage for three months to buyers. Only after this classification is payment against the Letter of Credit made.

The detailed research undertaken in Poti confirms many of the concerns expressed by the merchants in Europe outlined in section 3.7. Discussions at the Ministry of Transport in Georgia suggested that conditions were satisfactory. This appears contrary to the views of those organisations involved in the movement of cotton through the port.

## 5. Development Trends

Sections 3 and 4 described the current market situation in both Europe and Uzbekistan. The trading environment in the CIS is expected to undergo significant change within the next few years and this will require new logistic approaches to be implemented. Two important issues in the future transportation of cotton in Uzbekistan will be the development of a low cost transportation route to the nearest port - Poti - and also the introduction of containerisation.

### 5.1 Advantages of TRACECA

#### 5.1.1 Existing export routes

The traditional export route for Uzbekistan cotton has been through Russia, mainly through to the ports of Ilyechovsk, Riga and Leningrad and even by rail through to Europe. Cotton is sold Free-on-Board terms which requires the seller to arrange and pay for all costs up to "passing ship's rail" (loading on the vessel). This means that these costs are paid directly or indirectly by the Government of Uzbekistan.

The normal method of transport is to use the rail system. Cotton is a standard agricultural product which has a relatively low value and does not deteriorate rapidly. In transport terms, this indicates that the cost of transport is more likely to be critical than the speed of movement (service level). Given the landlocked position of Uzbekistan and the need to transfer the cargo long distances to the point of sale, rail represents the only economic transport mode for such large volume movements.

Rail tariff systems in the CIS are mainly based on sector charges. This means that, in general, the greater the distance the traffic is conveyed the higher the unit costs. Certain traffics such as coal from Siberia and grain movements attract preferential or subsidised charges but cotton is unlikely to be able to attract such special terms on the Russian rail system. There have been substantial increases in Russian rail sector charges and also higher transit costs in Kazakhstan. It is therefore necessary to examine whether a lower cost alternative exists. The TRACECA route to Poti is substantially shorter than Riga and also shorter than Ilyechovsk and therefore should, theoretically, be cheaper.

There have also been increases in charges at the Ukraine and Latvian ports. Poti has spare capacity and has been able to offer a 50% reduction in the standard tariff in order to attract new traffics, such as cotton.

The benefits of reducing the transport costs are significant in that the sale price of the cotton does not alter significantly with regard to the port used. The extra costs of transporting cotton to Riga as opposed to Poti cannot be recovered by obtaining a premium in the FOB price. It is advantageous

on behalf of the seller to be able to sell at the closest port. The Presidential Degree to route traffic via Poti is therefore commercially attractive to Uzbekistan.

### 5.1.2 Responsibilities in distribution chain

The Buyer is responsible for the second part of the distribution chain - from “ship’s rail” to the end-user. He has two main methods of achieving this - by chartering a whole or part of a vessel or using a liner shipping service. Chartering is generally used for larger shipments and is dependent on the distance involved. For example the 4,000 tonne shipment to Brazil and 1,800 tonne shipment to Trieste were charters. The more common system is to on-forward cotton to the end-user in small parcels using a scheduled liner service, such as those from Riga. These services are usually containerised and the cotton is loaded in the shipping line’s container at the port warehouse. The availability of these liner services is critical to the buyer to be able service his customers over a wide range of destinations.

Poti port is poorly supplied with liner shipping services. This is mainly due to the limited demand for such services given the difficult economic conditions in the Caucasus and lack of export goods. There are feeder vessels calling on a regular basis but no regular deep-sea container lines. The few shipping lines that do call have a limited geographical coverage. The port, therefore, presents a secondary distribution problem to the buyers and is not so attractive to buyers as the competing ports.

On FOB shipments the buyer is responsible for the loading costs when chartering a vessel. Any delays in cargo handling are therefore to his account. He is therefore more attracted to higher performance ports where the risks of delay are less. Poti currently has a poor performance record relative to the alternative FOB ports and is therefore also less desirable to the buyer.

It can be seen that there is a conflict of interests between the parties when using any of the ports but the routing by Poti could appear to favour the seller when compared to the alternatives. However, there are several developments which could make Poti more attractive:

- Offer a premium to take delivery of cotton at Poti - this option negates the sellers benefit in using Poti and results in loss of income
- Up-grade the facilities and performance at Poti such that is comparative to the competing Black Sea port of Ilyechovsk
- Alter the terms of sale such that the port was less of a determining factor.

### 5.1.3 TRACECA Corridor

The TRACECA programme is specifically designed to transform the existing non-integrated underdeveloped route into a modern integrated transport corridor. This includes specific programmes covering development of the rail infrastructure, improved rolling stock maintenance,

introduction of modern rail wagon tracking systems, reconstruction of the ferry terminals at Turkmenbashi and Baku and development of the port of Poti. The programme represents a commitment to provide a viable corridor to compete with other routings used for the movement of cotton. As indicated earlier, cotton is not time sensitive and reliability is seen as the key factor. It should be possible to develop an adequate level of reliability which can be gradually improved as the TRACECA developments are implemented.

There is a shortage of liner shipping services at Poti. However, it does have shipping services to the Mediterranean, Eastern Europe and North America. As indicated in Section 2, the European market is becoming concentrated in southern and eastern Europe where the cost of labour is relatively low. Poti is in a good position to service these markets and does have liner connections to some of these areas.

#### **5.1.4 Future market opportunities**

The main markets of the future are expected to be in the developing low labour cost economies of south east Asia and the Indian sub-continent. Poti is better positioned than the Baltic ports and if increased traffic could be obtained a direct call at Poti by ships servicing the Black Sea and eastern Mediterranean is possible. The major threat is expected to come from Iran as Bandar Abbas is better placed to service the Far East and India/Pakistan via Dubai. The opening of the Sarakhs-Mashhad rail link could make this routing more attractive. The main deterrent is the high cost and restrictions placed on using this route. The more attractive route via Karachi is expected to remain closed due to the problems in Afghanistan. The development of Gwardar in eastern Pakistan is partly based on attracting Central Asian cotton traffic.

The cotton industry is very conservative and has developed to the present operational standard over many years. Good quality cotton is grown in many countries at competitive prices so the margin of profit for the buyers is determined by controlling the secondary distribution costs. The buyers are experts in logistics and spend much of their time deciding on the most cost effective route from the port of shipment to the final point of sale and the timing of that movement relative to the timing of their purchase.

Currently there appears limited interest in changing the selling terms. There is a growing tendency internationally to export using CIF terms. Under these terms the seller is responsible for the delivery at the overseas port and pays all the FOB costs and the seafreight. This is generally considered to generate additional profits due to the additional selling price of the goods, though is by no means guaranteed. It is considered that a significant change to CIF selling would present problems to the seller, the Uzbekistan Government. They would be responsible for the onward distribution to customers to whom that they do not sell directly. This could contain considerable risks of extra storage and carriage costs.

An alternative would be for the buyer to purchase ex-works, as favoured by the Uzbekistan Government, thus relieving the seller of the transport costs and risks. The buyer would normally only be expected to take on this extra responsibility in a region with a relatively developed transport

infrastructure and service level where the risks are low and he can obtain a pricing advantage. Uzbekistan is far from the nearest port and the transport systems are not yet sufficiently developed and therefore contains considerable risks of extra charges. Given current conditions, buyers have indicated that they are unlikely to accept ex-works terms until the transport corridor is more developed.

It can be seen that the current terms of sale represent a compromise and to some extent meet the requirements of both parties. The successful development of the TRACECA corridor could result in reduced transport risks on the distribution of cotton from the ginnery to the port and therefore provide an environment when alternative terms of sale could be considered. The development of containerisation, in part could be used to promote the use on new selling and buying systems with advantages to both parties.

## 5.2 Containerisation

There are several reasons why containerisation of cotton has not taken place in Uzbekistan:

- Terms of Sale
- Load factors
- Access to containers

### *Terms of Sale*

As indicated in Sections 2 and 3, the terms of sale are FOB port. In practice, this means that the movement from Uzbekistan is a stock transfer from the point of origin (the ginnery) to the point of sale (port warehouse) as the goods are still not technically sold. Although some classification has been undertaken and the wagons are partly loaded on the basis of that classification, the rail movement is a bulk shipment with sortation taking place at the port warehouse. When the goods leave the ginnery, the end-user is normally not known because the buyer is selling ex-the port based on the world price at that time.

The original concept of containerisation was to reduce port handling costs by enabling the loading and discharging of the ship to be undertaken with consolidated loads, thus reducing the unit cost of handling and speeding up the ship turnaround times. This has since developed into a through transport system in which the goods are packed at the point of origin through to the final destination on a door-to-door basis. The use of the container reduces the amount of damage to the cargo, which occurs through multiple handling of loose goods, and gives lower unit transport costs because of this reduced handling.

It can be seen that the current method of selling cotton does not conform with these concepts in that the movement is currently only to the port and is all surface transportation. The goods are only moving to a port where the container is unstuffed into the port warehouse. The benefits of containerisation can only normally be achieved with a marine section of transport in the transport logistics. (Shippers occasionally use containers on some rail transport movements without a marine leg but this is mainly for security reasons which do not apply to cotton). Most cotton, other than on charter shipments, is containerised for the door-to-door movement from the point of sale by the buyer (port warehouse) to the end-user.

Containerisation of Uzbekistan cotton is unlikely to be attractive to any of the parties unless it involves a marine movement - i.e.: a door-to-door shipment direct from Uzbekistan, either from the ginnery or a consolidation warehouse direct to the end-user. This is currently not possible because at the time the cargo leaves Uzbekistan the end-user and therefore the destination is not known and usually the cotton has not been adequately classified to allow payment to be made. The Buyer uses the time between the loading in Uzbekistan and the loading onto the vessel, including the port storage, to "play" the market to obtain the best price.

Despite these difficulties, an opportunity may exist whereby part of the shipments could be containerised at source. It is estimated that in approximately 10-20% of shipments that the end-user and his location is known in advance. Subject to the development of a more reliable classification system and availability of containers, it may be possible to despatch such traffic on a door-to-door basis. This would contain benefits in that the handling costs would be lower, less damage would be incurred and storage costs would be negated. In such situations, it would be possible to negotiate different selling terms so that it could be transported as a single through movement from the seller to the buyer's customer.

If the transport corridors can be developed to produce a more reliable service with limitation of risks, it may be possible to increase this percentage by developing Just-in-Time logistical systems. This would result in stock storage of cotton being undertaken in Uzbekistan, rather than having to pay other countries in hard currency for such storage. Such a strategy would align with western practices which seek to minimise the logistical activities between the point of origin and point of use.

### *Load Factors*

The second deterrent to containerisation is the reduced load. The average amount of cotton lint that can be loaded in a 20ft container is up to 13.5 tonnes and in a 40ft container is up to 27 tonnes. By comparison a standard covered rail wagon will take up to 52 tonnes. This is a standard problem with many basic agricultural materials requiring a long distance surface transit.

With 50 wagons to a train, the train cargo capacity would be 2,500 ton. A container block train with 2 x 20ft to a flat wagon (sometimes 3) would have a cargo weight of about 1,200-1,500 tonnes. It can be seen that the unit cost of movement is higher in containers than conventional means. The link

across the Caspian Sea is limited to 28 wagons per sailing, thus reducing the main deck loading to around 1,000 tonnes, which is 50% less than current full crossing tonnages.

The Daewoo shipments using containers routed by Druzbha have been re-assessed and there is indicative evidence that the containerised shipping method is proving uneconomic compared to conventional means. This is because of the low load factor per wagon and the placing costs (see next section). Decisions on the use of containers continue against the background that the units need to be returned. The cost benefits of sending empty units versus full units of cotton is still being evaluated and is subject to constant re-appraisal.

An additional problem is the lifting the containers, as they need to be loaded either off a semi-trailer or off the ground at the loading point in Uzbekistan. There is a scarcity of adequate lifting equipment on the TRACECA route capable of lifting the 40ft units which are the most favoured size for the shipment of cotton. There are few specialised terminals such as those in Tashkent with overhead gantries and spreaders and none in the main cotton growing areas.

Despite these problems, it should be economic to use containers on a door-to-door basis, even allowing for the lower payload on the rail movement. It is said that the high cost of loading rail wagons, unloading into store, moving to class and reloading to ship, equates to the cost of movement by container of a smaller quantity direct from Tashkent. This calculation is still being evaluated. It is clear that further financial evaluations are required to confirm that viability of using containers door-to-door on all the key routes to ensure that the necessary investment in handling facilities can be justified.

### *Availability of Containers*

An evaluation of the proposal of using the empty Daewoo containers for conveying cotton to Europe and then being re-routed with new cargo back to Korea as proposed by the Multi-Modal project was evaluated by the Consultants logistical specialists. It was their view that the proposal was too complex and contained significant liabilities which would have required a major investment in control systems to operate. Their view has subsequently been confirmed by Daewoo.

Subsequent negotiations with Daewoo regarding purchases of cotton and shipment via Druzbha mean that the containers are not available for shipment along the TRACECA corridor even if the logistical difficulties could have been resolved. However, it would appear that they are re-assessing the overall use of containers in the light of the trial shipments. Whilst the low load factor (see above) was identified, another important problem is that their inbound containers end up only in one location, Asaka, but the cotton comes from many areas up to 500 km to 1,000 km from their factory. It is believed that it is cheaper to move the containers to the cotton than the cotton to the containers, but such repositioning containers is always expensive. Daewoo are attempting to negotiate special rates with Uzbekistan Railways to combat this problem.



Assuming that the Daewoo shipments proceed, there should still be sufficient containers in Uzbekistan to handle the small proportion of cotton which could move on a door-to-door basis where the end-user is known in advance. It is acknowledged that empty containers are likely to be concentrated in the Tashkent area, because of the import demand, rather than in the cotton growing areas. However, if the containerisation of the cotton were to be concentrated at a particular point, a major consolidation warehouse, the cost of placing the empty units could be reduced with careful planning. The majority of import traffics are in 20ft units and initial indications are that there may be a shortage of 40ft units.

Most containers are owned by the shipping lines, either in their own right or on long term leases. It is therefore necessary to link the final destination with the owner of the container. Shipping lines will only normally allow their containers to be used on their vessels to destinations served by them. In the case of Poti, Sealand is the major container operator and is developing a new \$15m container terminal in Poti which is next to the existing cotton warehouse complex. They have been approached and would be interested in carrying cotton to return their containers to either Poti or to one of their world-wide destinations. However, it is not known at this stage whether they have sufficient units in Central Asia or whether the shipments that could move on a door-to-door basis are to destinations served by them. Sealand containers are sent back empty via Moscow as they inflate the inbound rate but they would prefer to load return consignment to European destinations. Sealand quoted for the Daewoo traffic but were uncompetitive.

With regard to the proposals for consolidation warehousing, there is a Government plan to build a 40,000 tonne consolidation warehouse in Bukhara. Although this is on the main rail route much of the cotton would have to be moved there by truck or rail wagon, adding to the handling damage. This proposal was developed some time ago but no funds to refurbish the building that have been identified, nor for a laboratory for testing and a fire prevention system which would be needed.

One of the main buyers considers a 20,000 tonne warehouse with a throughput of 80-100,000 tonnes per year (turnover 4 times per year is a normal European standard) to be commercially viable. Here cotton would be "classed" to a standard acceptable to the final buyer (and the bank funding the deal) and loaded to the block train.

## 6. Proposals for Technical Assistance Programme

The key issues concerning the use of the TRACECA corridor and containerisation resulting from the two market appraisals were as follows:

- The Government of Uzbekistan would like to have increased volumes routed via Poti. This is because TRACECA is the shortest distance to the sea and it does not involve transits through Russia. The transit costs would therefore be expected to be lower, as current rail pricing is distance related. With FOB terms of sale, the Government is responsible for all transit costs and does not obtain a higher sale price when using other ports. Theoretically, therefore, the use of Poti should result in increased profitability on cotton exports.
- The Cotton Buyers are very conservative and work to narrow margins. The cotton market can be volatile and is changing with the gradual decline of demand in Europe and growth in the developing countries of south east Asia and the Indian sub-continent. They have adapted to these changes using the current selling system and logistics. They were therefore not demanding change and would be opposed to any alterations which increased their risk exposure.
- Although Uzbekistan is the second largest supplier of export cotton, alternative sources are available and Uzbek cotton does not command a premium. Concerns over quality result in a price 10-12% below world price. This would suggest that the Government of Uzbekistan cannot dictate terms to the market and therefore a co-ordinated approach with the major buyers is required.
- The Cotton Buyers were not favourably disposed to use of the TRACECA corridor. This was because of the variable service level, lack of facilities and poor performance at Poti, shortages of onward liner shipping services and adverse perceptions of stability in the Caucasus region. Their attitude was that they would only use Poti if forced to do so, rather than viewing it as a potentially beneficial new route.
- The main constraint to containerisation was the current selling terms. Cotton is a commodity and when it is transported to the point of sale at the port for FOB sale the end-user is normally not known. The benefits of containerisation are unlikely to be realised unless traffic moves on a door-to-door basis over significant distances. Less than 20% of the traffic could be containerised at source to known end-users. Unitisation would require changes in the classification system to meet purchasers quality concerns.
- The costs of using multi-modal logistics on base agricultural products had not been adequately calculated at that stage to confirm that the use of containers could produce lower logistics chain costs than by using existing conventional means. The re-evaluation by Daewoo of their containerisation programme tended to suggest that there are costing concerns which act against unitisation with its lower load factors.
- The cotton market has changed in that the primary demand is to the east, rather than Western Europe. This favours use of the Chinese, Pakistani or Iranian ports if the correct price/service conditions were present. In the short term, availability of good shipping connections from the CIS port to the Far East is very important.

Any Technical Assistance programme should be focused on addressing these concerns. It was clear that there are other major issues such as selling terms, classification systems, investment in the industry and the economic situation in Uzbekistan which have a significant impact on the Uzbekistan cotton market. However, this Technical Assistance programme was confined to resolution of the transportation issues, whilst having due regard to these other issues.

It was recommended that Phases 2 and 3 covered by Part 2 of this report should concentrate on the following issues:

- Monitoring of Logistics
- Investment in Facilities
- Costs Benefits of Containerisation via TRACECA
- Containerisation

This involved a change of programme from that originally proposed in August 1996. The main emphasis was now to be towards how the TRACECA corridor and the Port of Poti could be developed to make it attractive to the Buyers, as well as to the Government of Uzbekistan. The research indicated more fundamental problems in containerising cotton and that therefore the initial emphasis should be on enhancing conventional logistical systems prior to introducing the multi-modal concept. The use of containerisation was still seen as an important objective and additional work in this respect is still required.

## 7 Monitoring of Logistics

In order to develop proposals to improve the logistics of cotton movements from Uzbekistan and examine the alternative methodologies, it was necessary to undertake a more comprehensive appraisal of the current “logistics chain” and its associated environment than was undertaken in Part 1. The key elements of the “chain” are as follows:

- movement from the farms or harvesting points to the processing plants - “ginneries”
- transfer of the processed product in bales from the ginneries to the railheads
- loading into railwagons and dispatch to consolidation points and then to the borders
- despatch from the border to the FOB port
- unloading and storage at warehouses close to the port
- transfer from the warehouses and loading to vessel for onward delivery or secondary distribution

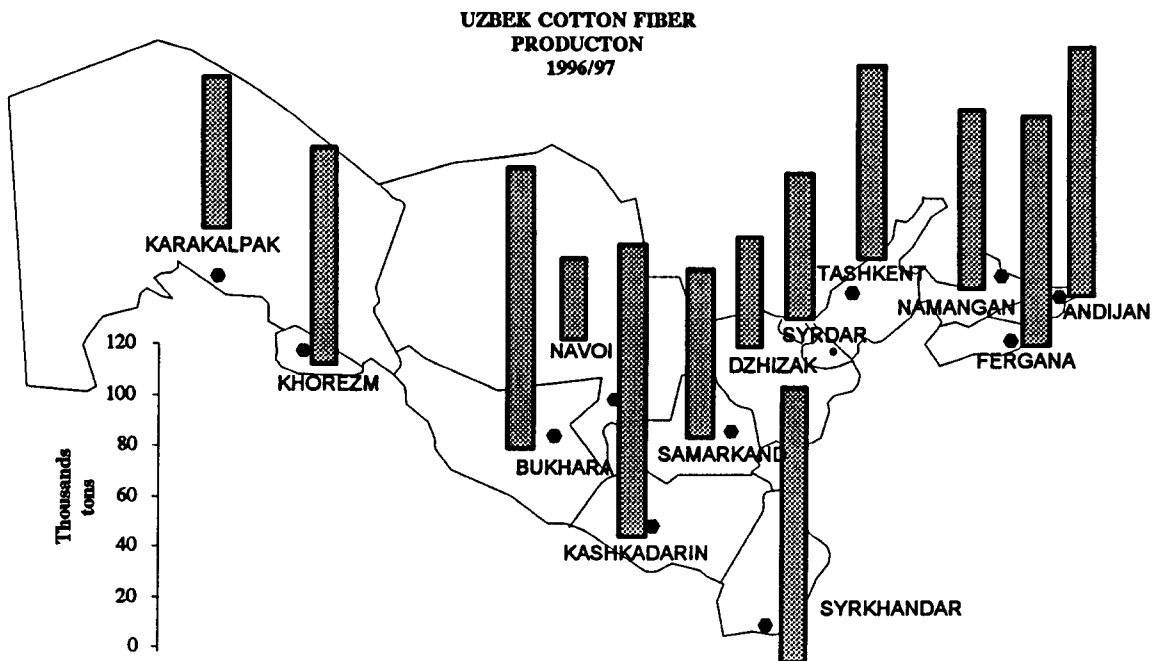
### 7.1 Movement of Raw Cotton from Point of Production to the Ginneries

Cotton growing in Uzbekistan occupies a surface area of around 1.6 million hectares. This represents 45% of the area cultivated with irrigation and 35% of the entire cultivated area in the country. There has been a gradual reduction in the land given to cotton from 43% in 1992 due to land degradation and changes in land use, in line with the Government policy of increased production of cereal crops leading to self-sufficiency. There are proposals to stabilise the cotton production area at 1.3 million hectares. In the early 1990s, the cotton was produced by the state-owned agricultural enterprises which consisted of 594 sovkhoses and by the agricultural collectives which consisted of 1043 kolkhozes. Each sovkhos averaged approximately 1300 hectares and each kolkhoze around 830 acres. Changes in Government policy following independence with the trend towards denationalisation and privatisation has led to an increase in the numbers and the market share from the kolkhozes with larger production units. This diversity of production sourcing indicates substantial transport resources will be required to move the raw cotton to the ginneries.

Approximately 3 -3.5 million tonnes of raw cotton are produced annually. This equates to 960,000 - 1.1 million tonnes of cotton fibre, based on the average production ratio of 31-32 % raw to processed. The production of cotton is subject to centralised Government control. The total production target is defined by the State Committee for Forecasting and the Ministry of Agriculture. This is distributed amongst the regions and represents a minimum production output. The producers have to sell 60% of their cotton to Uzgoshlopkopromsbit at a fixed price in Sums ( indicated at the equivalent of around \$140 per tonne) with the balance being sold at a different price, though still through the Ministry of Foreign and Economic Relations. Though the growers are paid in Sum based on an annually agreed tariff, much of their inputs are in hard currency. This is leading to significant financial problems for farmers which affects both the production and the availability and quality of the transport required to move the raw cotton to the processing plants.

All of the provinces of Uzbekistan produce cotton of a reasonably high quality, in world market terms. The higher qualities tend to come from the south where there is more sunshine and the climate is drier. However, cotton is grown throughout the country and is relatively evenly spread by province as shown in Figure 1 indicating the distribution of production by province for the 1996-7 season :

Figure 1 - Uzbekistan Cotton Production by Region 1996-7



The harvest period is from mid-September to mid-November and therefore the initial transport requirement is over a short concentrated period. The volume of the delivery for the 120 ginneries is around 100,000 tonnes during the first week of the harvest (850 tonnes per plant per day). On average each plant receives 30,000 tonnes of raw cotton in the two months of the harvest.

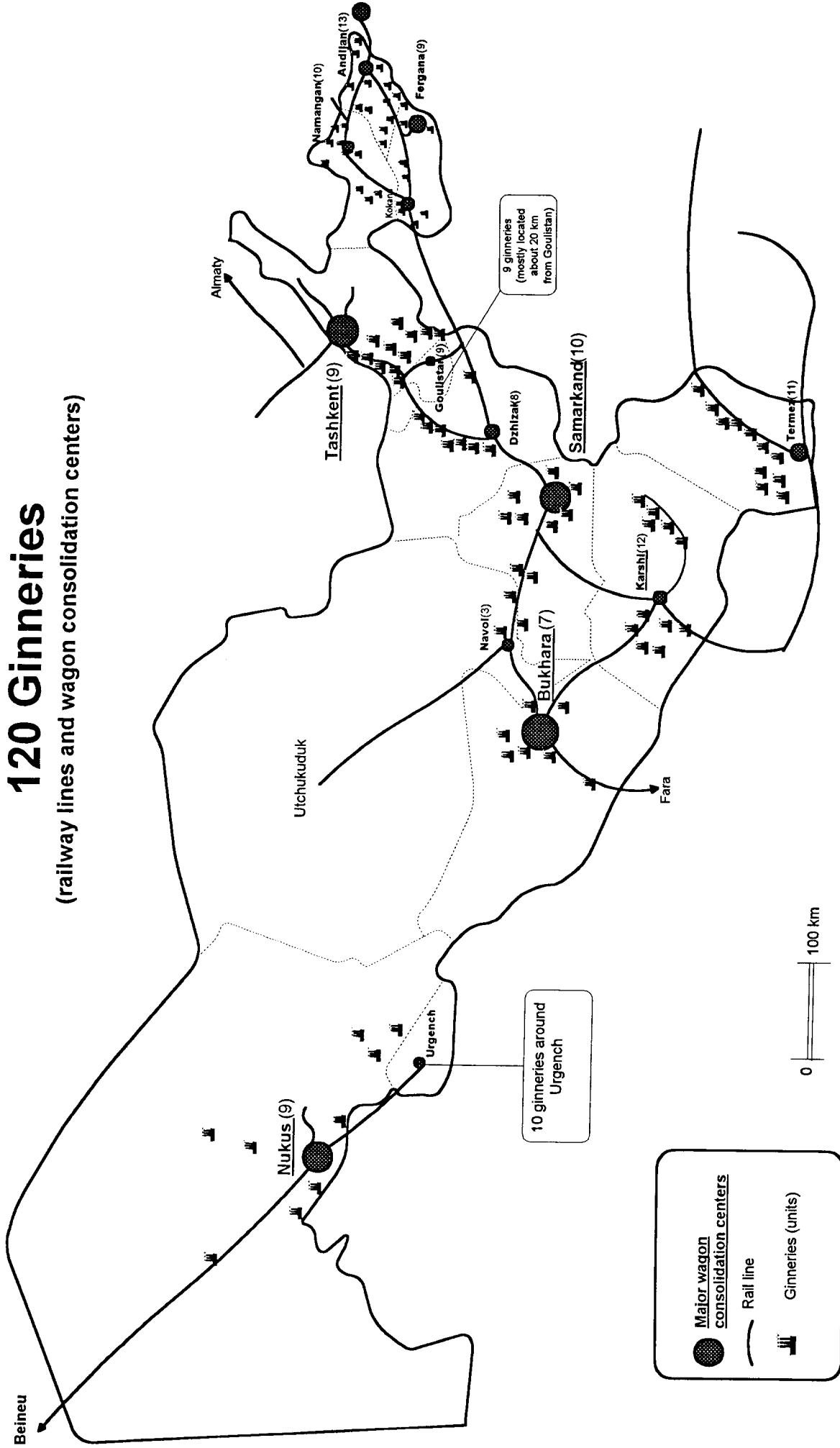
Each ginnery has several reception centres to which the cotton is transported, usually by tractor and trailer or small trucks. Each ginnery has its own designated catchment area with average transit distances from the farm of around 50 kilometres. On reception, the plant classifies the cotton for storage in homogeneous batches in open storage piles called "bunts". These "bunts" contain ventilation shafts to prevent degradation of the stock by fermentation. This initial classification into homogenous batches is based on the principle that the cotton in that bunt will produce fibres that is within the same sale category.

The initial logistical activity is undertaken with a variety of forms of local transport over a short period. Whilst this system is adequate with no evidence to indicate problems which affect the end-product, there is longer term concern at the availability of such resources given the difficult financial position of many of the farms.

The location of the 120 ginneries in Uzbekistan is shown in Figure 2:

# Location of the 120 Ginneries

(railway lines and wagon consolidation centers)



## 7.2 Movement from the Ginneries to the Railheads

The raw cotton is moved from the “bunt” to the ginning plant. Following this process the primary cotton wool is separated from the husk. This produces for each 100 kilos - 32 kg of fibre, 54 kg seed and 14 kg of linters, motes and waste. The fibre is transformed into bales with an average weight of 215 kilos each. The classification is undertaken according to Uzbek standards based on 240 bales called a “Mark”, which equates to one wagon load of around 51.6 tonnes. This is classified as follows:

Standards:	Birinchi	Ikinchi	Uchinchi	Turtinchi	Beshinchi
Qualities :	Oliy	Jakshi	Urta	Oddiy	Iflos

This classification systems is acceptable to some buyers but at some time later in the selling process most cotton needs to be check-graded, often at the FOB port or the border. However, many buyers prefer to use the American USDA standard:

Standards:	Good Middling, Strict Middling, Middling, Strict Low Middling, Low Middling, Strict Good Ordinary, Ordinary, Below Grade
Colour:	White, Light Spot, Spotted, Tinged, Yellow Strained, Light Grey, Grey

It can be seen that the systems are not integrated and the reliability of the national classification system remains a major problem area as indicated in Part 1. However, the need to have an independent check at the FOB port or border crossing point before final payment is not unique and applies to the majority of international cotton movements from wherever the cotton is grown.

The baling is undertaken, as indicated, within the ginneries. This has been a problem area in that investment is required in the ginnery and in packing facilities so that the cotton is processed and cleaned to a uniform high standard and that the bales remain intact and are, consequently, less prone to moisture ingress. The buyers reject the bales if more than one band either side of the central band is broken. It was noted that a significant number of reject bales at Poti were because of broken bands. Improvements are expected in the next season with the use of wider bands, rather than the short wire ties currently used.

The ginneries have a total capacity to produce around 2.1 million tonnes of cotton fibre within an average of 120-140 days. In practice, they operate all year to provide full employment by running below capacity. It should be possible to complete the process sooner but the extension is for social reasons. This tends to have implications for the logistics in that the movements are more evenly spread over the year, although volumes between July and September are low.



The price of the cotton fibre ex-ginnery is around \$400 per tonne. Local mills in Uzbekistan purchase around 200,000 tonnes and the rest is made available for the export market. Textile factories are being commissioned in Namanga and Tashkent, but this is unlikely to significantly alter the local consumption in the short term. The Government's longer term intention is to increase the local purchasing to 50% of cotton by the year 2002 by development of spinning and manufacturing capacity so as to provide added-value services, as opposed to sale of the base material. However, it is expected that over 70% will continue to be exported in the short term generating valuable hard currency revenue.

The twenty or so active buyers in Uzbekistan negotiate with three separate organisations:

- Innovatsia
- Uzmarkazimpex
- Uzprommashimpex

Following agreement of the terms and conditions of sale - usually FOB (Free on Board) or Delivered at Frontier (DAF) - arrangements are made by Uzgoshlopkopromsbit for the supply ex-the ginneries to fulfil the agreed contracts. The buyers pay for the cotton with Letters of Credit based on an agreed price for the different qualities. Current world price is around \$1400 per tonne but due to quality concerns Uzbek Middling was selling around \$1230 per tonne (Aug 97), though the market fluctuates. Following payment of a 15-20% deposit, the cotton fibre is ready for dispatch under the initial control of Uzgoshlopkopromsbit who allocate the stocks to meet the contract and organise transport from the plants to the point of loading.

Approximately 60% of the ginneries are rail-connected and wagons are ordered and supplied by Uzbekistan Railways. The remaining ginneries have to send the bales by road to the designated rail terminal for loading. This is usually undertaken using 8 tonne capacity vehicles and the transit distance can be over 100 kilometres between the plants and the stations. The ginning plant transport departments are responsible for handling the transport movement to "Free on Rail" if they are rail connected or to "Free on Rail" nominated station if not.

### **7.3 Loading of Railwagons and Despatch to Consolidation Points and Borders**

This activity consists of four key elements:

- preparation of the wagons
- loading of the cotton
- rail transport to the nearest rail station and then to a marshalling point
- rail transport from the marshalling point to the border

For reasons of fire safety, due to emissions from the locomotives or spontaneous combustion if the bales become damp and the generally poor condition of the covered wagons, it is necessary to seal the wagons by placing Kraft paper bonded with non-inflammable glue on all doors and openings and any other defective points within the wagon. This operation is expensive because the raw materials have to be imported and paid in hard currency.

In the case of the 72 ginneries equipped with their own rail sidings and rail platforms, the 240 bales (one "Mark") of classified cotton are loaded into the covered wagons. This is accomplished with two fork lift trucks and takes around two hours. This activity requires great expertise in order to ensure all the bales are securely stowed. There will be some settlement and movement during the journey caused by shunting and acceleration and deceleration and the skill applied may affect the amount of damage in transit. There are indications that some damaged bales may be being loaded and loose cotton is also present, based on inspections at Poti when the wagons arrive. However, it is recognised that this is difficult to confirm without specific inspections at either end.

In the case of the 48 ginneries without sidings, the cotton arrives at the nominated station or loading point in small trucks and is loaded by the railways into the prepared wagons. This is a more expensive operation given the double handling activity and increases the risk of damage to bales. Stations and loading points often have minimum warehousing or covered storage areas, so immediate loading is important.

In the case of the rail-connected ginneries, the wagons are hauled by locomotives in small groups of wagons, 5-10 maximum, to the nearest rail station, with an average journey length of 120 kilometres. As these wagons, from either these stations or the nominated stations for non-rail connected ginneries, are not necessarily going to the same final destination, a series of marshalling operations are required prior to form a complete train for a given destination.

The transit to the border is via long distance consolidated trains consisting of 28-50 wagons per train. Uzbekistan Railways send the wagons from the nominated station or siding through a series of marshalling operations to finally reach four main marshalling yards:

- Urgench
- Bukhara
- Samarkand
- Tashkent

It is at these marshalling yards that the complete trains are made up according to common destination. They are then hauled to one of the three main border crossing points:

- Farap, on the Turkmen border - trains for Poti, Bandar Abbas and Mersin

- Tchengenly, on the Kazakh border - trains for Riga, Brest, Chop or Druzha
- Bejneu, on the Kazakh border - trains for Odessa and Ilyechovsk

At the borders, the train crews and locomotives are changed and haulage continues to the FOB destination with another rail organisation.

The border is the point where the direct transportation responsibility moves from Uzgoshlopkopromsbit, who are responsible for cotton movements within Uzbekistan, to Uzvneshtrans who are responsible for all movements outside Uzbekistan, on behalf of Uzgoshlopkopromsbit.

#### **7.4 Despatch from the Border to the FOB Port**

Uzvneshtrans is a national forwarding organisation under the Ministry of Foreign and Economic Relations (MFER). It is responsible for the movement on much of the “state” traffic. In theory, it does not have a monopoly on the export movement of cotton. Other forwarding companies can apply to carry cotton but this requires authorisation by the MFER that they meet certain conditions. Since no forwarders have yet been able to comply with these conditions, Uzvneshtrans in practice has a monopoly. It is important to note that the cotton is still the responsibility of MFER under current terms of sale until the port or final border and therefore there is a logic to containing that responsibility and associated liabilities for international transport within its own organisational structure. This situation is not expected to change in the short term.

Uzgoshlopkopromsbit and Uzvneshtrans work together to provide the export declaration and other standard Customs and transit documents. In effect, Uzvneshtrans take over the responsibility for the movement of the traffic from the point of loading into the rail wagon and are responsible for the following aspects:

- Via FOB Ports ( Poti, Riga etc.)
  - Export, Customs and transit documentation
  - Rail transit costs
  - Customs clearance fees in transit
  - Discharge of wagons in port
  - Temporary warehousing
  - FOB costs
- Via Overland (Brest, Chop)
  - Export, Customs and transit documentation
  - Rail transit costs
  - Customs clearance fees in transit

Cost of rail gauge change

Discharge of railwagons to warehouse and reloading into containers/other rail wagons

DAF costs (Delivered at Frontier)

The cotton is then theoretically transported in block trains from the Uzbek border to the FOB port or DAF border. The next section follows only the logistics chain of the TRACECA corridor because it is the focus of this project.

The train proceeds through Turkmenistan. There are four key potential constraints:

- **Limited capacity:** the Turkmen rail line is mainly single track and therefore has capacity constraints in relation to volumes moving through the Sarakhs border with Iran and between Turkmenbashi and the rest of Turkmenistan. Uzbekistan is also increasing its eastbound movements from Georgian ports to Uzbekistan thus making the line busier. As yet this capacity situation is not causing significant delays but an example of the problem is that the Ashgabat-Turkmenbashi line was closed for transit traffics 20-30 July, with only three days notice, to allow for the movement of fuel within Turkmenistan.
- **Turkmenbashi Ferry Terminal:** each ferry has a capacity of only 28 wagons and therefore larger block trains have to be split. Due to the relatively poor performance of the ferry service (slow port turnarounds) and that it is an on-demand service (rather than scheduled), delays can and do occur in Turkmenbashi awaiting capacity. Only one linkspan is in operation at Turkmenbashi and the Government of Uzbekistan has offered assistance in refurbishing the second berth, but no response has been received.
- **Road v Rail:** the ferry is a multi-purpose roro vessel with capacity for both railwagons and trucks. The cargo carried in the trucks tends to be higher value and can thus support additional unreceipted payments. These are made to the ferry personnel in order to get priority. This results in short-shipment of rail wagons.
- **Documentation:** the rail documentation is normally made for the whole consignment. However, in Turkmenistan, it is required for each wagon and a transit manifest is also needed. It is therefore necessary to produce separate documentation for this transit.

In Baku, the trains are re-assembled. This activity can be delayed awaiting wagons arriving from Turkmenbashi due to lack of capacity or wagon damage or documentation problems. Only when the train is re-assembled is it sent on to Georgia.

In Georgia, the train has to be broken for transit through the mountainous section west of Tbilisi and then reassembled for final delivery to Poti. The wagons are shunted to the old tea warehouses outside the port area for unloading. The overall transit times can vary between 10 to 20 days, mainly determined by the level of delays incurred in the Trans Caspian crossing.

## 7.5 Unloading of Wagons and Storage awaiting Shipment

Uzvneshtrans are still responsible for the cotton movement and have appointed GTE as the local agent to co-ordinate their activities in Poti. A certificate was issued from each ginnery where the cotton was loaded and this together with the wagon numbers and advice notes are faxed to GTE from Uzvneshtrans in Tashkent after the transit has commenced.

Each wagon has been sealed on departure from Uzbekistan and these seals are checked on arrival by the Chamber of Commerce in Poti, who act as independent assessors. They tally the cotton documents against the cargo manifest as the cargo is discharged, spot check the weight of bales, record bale numbers and register the damage in transit. It was noted that there were significant differences recorded between the documents and the cargo manifest, both over and under weight.

The rail wagons go direct to each warehouse and are unloaded by small diesel powered front loaders with a three bale capacity. It is recognised that discharge of wagons is more difficult than loading and takes longer due to settlement of the cargo and damage in transit. In the initial period, problems were experienced which may have caused additional damage to the bales extracting them from the wagons. However, this is now less of a problem given the expertise that has been gained in the intervening period. It has been indicated that the initial damage level of around 7% has fallen to around 2%. The railways only allow 24 hours for the unloading of the wagon, after which demurrage is charged. Due to the uneven flow, significant demurrage payments can be incurred, even though there is no urgent action taken (or need) to return the empty wagons to Uzbekistan.

The cotton from each wagon is placed in the warehouse in a separate stack as it will have come from a different ginnery and therefore contains cotton from a specific area and be of a separate class. These stacks are checked by the buyer's representative for suitability for on-carrying and, consequently, acceptance of the cotton. However, there is no re-classing to international standard currently taking place in Poti as there are no international classing organisations present. In most cases, this is being undertaken at the port of destination such as at Trieste or Mersin.

The storage in the warehouses are for account of the seller - MFER - for the first 20 days. The buyers are then responsible for the storage charges. The buyers can keep the stock there until they have sufficient for a bulk shipment - usually 1,800 tonnes minimum - or in stock awaiting beneficial changes in prices in the market. The warehouses therefore have a dual role as both transit and stock warehouses. This makes warehouse planning more difficult and can lead to congestion.

There is no regular return traffic for the covered rail wagons to Uzbekistan. Although there is increased movements to Uzbekistan via the Georgian ports, this tends to be in bulk hopper wagons consisting of soya, flour, wheat etc. The covered wagons remain in Georgia or are routed with traffic into Russia and eventually returned to Uzbekistan. This is an internal rail problem which does not currently appear to affect the availability of wagons in Uzbekistan for use in cotton shipments, but does lead to more wagons needing to be sealed with paper and glue for use on cotton.

## 7.6 Transfer of the Cotton to the Port for Secondary Distribution

When sufficient cotton is in stock and the price/demand factors are correct, the buyers charter a vessel for the onward shipment. These shipments have mainly been to the Francesco Parisi cotton complex in Trieste or to Mersin. The buyer's representative selects the bales to be sent by visual inspection of its general condition and they are then loaded on 12 metre road trailers and sent to the port for loading.

The main cotton berth in Poti is Berth No 9, though adjacent berths are used particularly if more than one cotton ship is present. The main vessels used are the Volga-Don type which are approximately 3,000 tonnes dwt but as cotton has a high cubic can only load 1,800-2,000 tonnes of cotton fibre. These vessels have wide hatches and therefore there are minimal stowage problems as the bales can be man-handled into any position not reached directly by the crane. Damage during loading is not significant given these good stowage conditions. Wooden dunnage is used to separate the bales from the sides of the hold. The loading is usually undertaken 6 bales per lift, though there are 8 sets of hooks. The stowage on the truck tends to determine the lift size.

The loading rate for such a vessel in Part 1 of the report was indicated as 4-7 days for 1800 tonnes last November. This was due to poor labour performance and power shortages. This compared with 500-800 tonnes per day achieved in Ilyechovsk. However, performance has improved significantly as the labour has become more experienced in handling cotton and comparable rates to those at Ilyechovsk are now being achieved. Power supply still remains a problem as these vessels have no ships cranes.

Another significant change which has taken place is that Poti is being used as a transit port by the seller - MFER - who is now offering buyers FOB Mersin or Dubai. This change in policy satisfies many of the previous concerns of the buyers with regard to Poti, versus Riga or Ilyechovsk. They can take final delivery in established cotton centres and undertake the final classification at that point to effect payment. This strategy makes the use of Poti more attractive to the buyers and makes better utilisation of the resources as faster transit through the available warehouses gives greater storage turnover per square metre.

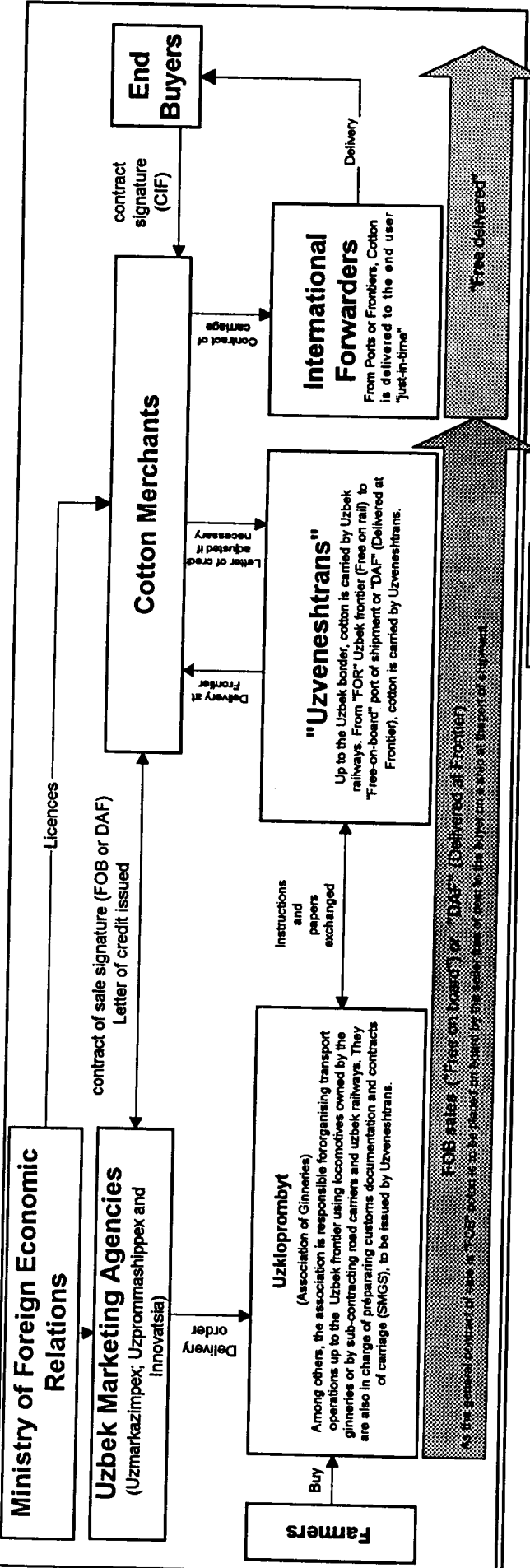
The loading to the more distant locations, such as Dubai or bulk shipments to Brazil, are undertaken with much larger vessels. This often involves an increased requirement for lateral movements within the vessels, especially if it is a tweendeck ship. This has to be undertaken with forklift trucks due to the transit distances and required handling speeds. There is a shortage of suitable fork trucks and this can have a negative effect on loading performance.

The buyer normally sells the cotton to the end-user on a Free Delivered (customer warehouse) basis. The responsibility for this final movement is usually sub-contracted to an international forwarding company. Since the end-user pays on delivery and has limited raw material stock warehousing area,

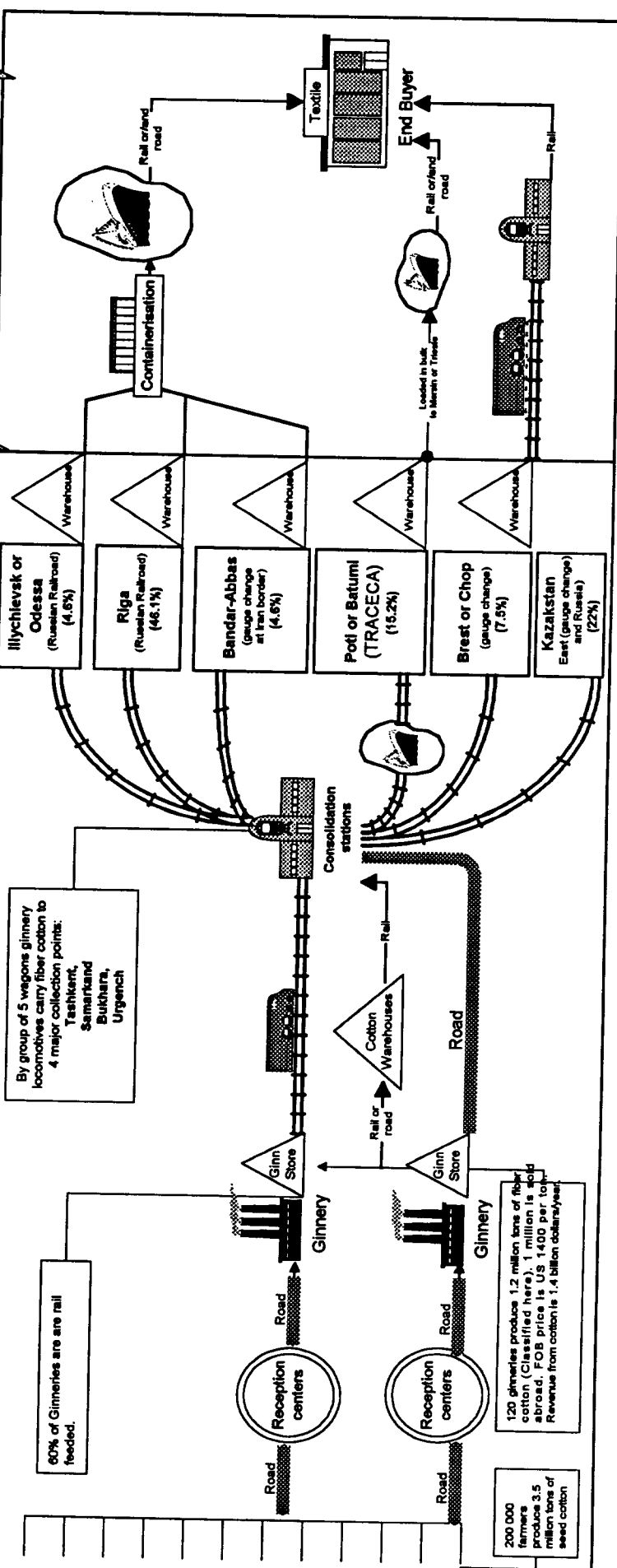
most of the traffic is required to be delivered on a JIT (Just-in-Time) basis. This often means that the buyer has to undertake transit storage after the shipment from Poti, such as at Trieste or Mersin, prior to the final delivery. This final movement is normally by container if a sea transit is involved or direct by road.

The commercial processes and the logistics chain for the export of cotton from Uzbekistan are shown diagrammatically in Figure 3.

**COMMERCIAL PROCESS**



**TRANSPORT - LOGISTICS**





## 7.7 Logistical Problems

It is clear that there are a number of logistical problems and bottlenecks which can effect the movement of cotton along the TRACECA route. The movement of cotton is undertaken by state enterprises and is therefore considered to be confidential. The Consultants were therefore not able to obtain records of shipment performance from either Uzgoshlopkopromsbit or Uzvneshtrans and therefore rely on site inspections and interviews with various parties. The following sections identify perceived problem areas and provide potential solutions:

### Logistics Planning

There is no evidence to indicate co-ordination of the logistics chain between the ginneries, as the initial despatching point, and the port warehouse as the final delivery point. In a developed logistical environment, goods would be despatched to an agreed schedule which ensured a relatively even flow and that warehouse capacity was available to accommodate the cargo on arrival.

There are indications that the despatch is determined by the ginnery managers. Following receipt of the orders from MFER and Uzgoshlopkopromsbit, the ginnery is responsible for sending the goods to the nominated rail station and is paid accordingly. This will affect the cash flow of the ginnery and therefore their prime interest is in the rapid despatch of the goods so as to receive payment, rather than concerns as to the logistics of the through movement. It is also noted that Uzvneshtrans forwarding responsibility commences only when the cotton has already been loaded onto the rail wagons.

The result of this situation is that the movements along the TRACECA route are on-demand, possibly being determined by the ginnery despatches, rather than being scheduled. This creates uneven traffic flows which can cause storage problems in Poti and demurrage charges on rail wagons. There is scope for improvements in the co-ordination of movements between the various organisations involved.

It is recommended that the logistical monitoring system is extended to include the collection of the cotton from the ginneries. In effect, the cotton could be "called-off" at a specific time and date to meet scheduled block trains. This would give logistics management control from point of collection to the delivery point. This will result in an improved work pattern, enhanced reliability of transit times and reduce the risk of demurrage payments caused by delays. This should be a computer based system with an analysis facility and a Management Information System (MIS) which clearly identifies logistical performance. It should also have access and input capability at both ends of the journey so that it is a live system for use by management at both ends of the journey. In this way, Poti would be aware of scheduled movements before the journey commences in order to programme warehousing space and handling resources.

### Route Capacity

The TRACECA route is the most attractive route to the Government of Uzbekistan and it is proposed to substantially increase the volumes of cotton sent along this corridor. However, there is limited infrastructure and ferry capacity which could start to constrain performance and lead to increased costs.

It is projected that there will be increased movements via Bandar Abbas and through to Turkey via the Sarakhs crossing. This could create congestion on the rail network in southern Uzbekistan and eastern Turkmenistan. Uzbekistan is also expected to increase its imports via TRACECA and this could cause some congestion along the whole corridor, particularly on the single line stretches of the network and on the Trans Caspian crossing. Development of the energy sector is expected to result in increased flows between the Georgian ports and Baku. Oil contracts have already commenced between Aktau and Baku with movement to Batumi by rail and these are scheduled to increase.

Fortunately, there has been a significant decline in rail volumes since independence and there is currently spare capacity. However, it is recognised that investment will be necessary to up-grade the system if delays are not to develop which could lead to a deterioration in performance. The most serious bottleneck is considered to be the ferry crossing between Turkmenbashi and Baku. Only one linkspan is in operation, the port turnrounds are slow and the service is on-demand from the Baku side. An additional concern is the predicted growth in road vehicles crossing the Caspian, particularly with the problems of road transit through Russia. Given current circumstance, this growth in road traffic will result in deterioration of rail service because of the prioritisation of rail traffic on the ferry.

The TRACECA programme is intended to address many of these issues and specific recommendations are being made in other sector reports. In respect of cotton shipments, investment in the Trans Caspian link is considered to be the most critical.

### Warehousing in Poti

There is insufficient warehousing in Poti with the current 10,000 tonnes capacity (+ 5,000 tonnes in a port warehouse). This aspect is discussed in more detail in Section 8. However, the situation is made worse by the large volumes of damaged cargo in store which now exceed half of one of the four warehouses - over 10% of the site capacity. This traffic was either damaged on loading, in transit or on unloading and consists of damaged bales with broken bands or explosion of product or contamination, as well as loose cotton.

This situation has been gradually developing, though the incidence of damage may be falling. There have been a number of suggestions as to what to do with this cargo which has been rejected by the buyers and therefore is still the responsibility of MFER. This has included sale of up to 2,000 tonnes per year to the Georgian cotton industry at preferential prices or auctioning to local or international

buyers. It is clear that an early decision is required before next seasons shipments start arriving in September, otherwise there will be insufficient warehousing. It should be noted that the Azeri cotton is now being diverted to Poti due to problems in Iran. This will not only create more capacity concerns, but could complicate the damage position as it is expected there will also be damaged Azeri cotton.

It is recommended that consideration is given to installing a baling machine. This will enable the damaged cargo to be stored more efficiently and open the potential to ship it overseas for sale. This investment is included in Section 8.

### Dedicated Berth

There has been a significant improvement in handling performance at the Port of Poti since last year. This has been mainly due to the increased experience and motivation of the labour force, since no additional special equipment has been provided. This situation must be considered a key factor in attracting the Azeri cotton traffic, as well as the Uzbek shipments. However, the loading performance does not yet match western handling performance or even that achieved at Riga.

It is important that if this progress is to be maintained and new traffic handled in line with the policy of Government of Uzbekistan that this expertise gained is protected. It is recommended that consideration should be given to the designation of a dedicated cotton berth, probably Berth 9, where priority is given to cotton vessels and the labour force is adequately trained in the handling of cotton. It is evident that with the expansion in overall volumes, it will be necessary to further increase the handling speeds so as to avoid storage problems. This will require some investment in equipment as it is unlikely that this can be achieved solely on the basis of further improvements in labour input.

Local organisations involved in the movement of cotton consider that with a leased berth, minor works and dedicated labour that the current berth capacity of 135,000 tonnes, which is forecast to be exceeded in 1998, could be increased to 400,000 tonnes per annum. Whilst this may be optimistic, it represents the scale of increase that will be necessary if Poti is to sustain its growth rate as a cotton transit port.

Specific recommendations on investment within the port to expedite the movement of cotton are included in the next section.

## **8. Investment in Facilities**

### **8.1 Investment Principles**

Following submission of Part 1, there has been a change of emphasis within the TACIS organisation in respect of the TRACECA and some of their other programmes. This involves the potential to make small scale investments in facilities and infrastructure, as opposed to the previous concentration on Technical Assistance. Major investments will still remain the remit of the international loan organisations - the World Bank, European Bank for Reconstruction and Development, Asian Development Bank etc.

The focus of this section has, therefore, been on specific small scale investments, up to 2 million ECU, which could facilitate the export of Uzbek cotton, ideally along the TRACECA corridor. The overall logistics chain described in Section 7 has been evaluated. It is clear that the potential for investment is almost unlimited and that this would assist the export of cotton:

- Investment in production inputs at the farms, including transport resources
- Refurbishment of the ginneries, including new baling machinery
- Investment in the rail network along TRACECA
- New or up-graded port facilities at Turkmenbashi and Baku
- Improved ferry operations, possibly with new tonnage
- Redevelopment of the Port of Poti

Whilst all these investment requirements can be justified, the scale of investment is beyond that of the TACIS programme. The other TRACECA projects have made specific recommendations with regard to many of these areas. This project has considered only the small scale investment opportunities and selected those at the beginning and end of the TRACECA corridor which would specifically benefit the movement of cotton. These are concerned with the collection of cotton prior to despatch along the corridor and the interface between the primary and secondary distribution phases at the FOB port. The three areas with suitable investment potential which were identified are as follows:

- a Logistics Centre at Bukhara for consolidation of cotton traffics
- storage facilities at Poti
- handling facilities within the Port of Poti

Although the investment would be in the form of a “grant”, the Consultants have evaluated the investment in terms of a commercial-type loan. This approach ensures that the:

- objectives of the intervention are clearly stated
- beneficiary is identified
- cost and financial programme is indicated
- assumptions and risks are known and mitigated
- investment is quantified in cost/benefit terms
- intervention can be monitored as to its effectiveness

This approach is similar to that of a pre-feasibility study for each area of investment.

## 8.2 Logistics Centre at Bukhara

The “Protocol of the Government Commission on Co-ordination of Cargoflow of the Republic of Uzbekistan through Georgian Ports” dated December 1996 from the Cabinet of Ministers stated that MFER and others speed up the co-ordination plan to establish a base for cotton shipments at Bukhara and submit a plan within one month to the Cabinet of Ministers.

Uzbekistan Railways are currently working on a draft decree for the Cabinet of Ministers which outlines the objective of the Bukhara facility and identifies future opportunities. The role of the facility is considered to be as follows:

- reception of bales from the ginnery
- storing of bales under fire-safe conditions
- allowing inspection of cotton by the international buyers
- providing testing and grading facilities for international classification
- conditioning and loading for export to the FOB port, FOR borders or direct to the end-users users

The selection of Bukhara is because of its strategic location with regard to programmed shipments along the TRACECA corridor. It is close to the rail border at Farap, is in the centre of a major cotton growing area and, with its central position, is close to many of the other key growing areas.

The site favoured by the Rail Authorities is located on the Bukhara-Alat road, south of Bukhara and already has three rail sidings. The current proposals by Uzbek Railways, Shoshtrans and Calberson - Axis is to develop a 50,000 sq. metre cotton warehouse to be constructed on a modular basis. The initial phase would be for the construction of 12,000 sq. metres in 1998. The warehouse would be 80 metres wide 140 metres long and 6-8 metres high. Based on construction costs of \$200 per sq. metre, the warehouse would cost \$2.24 million. In addition 800-1000 sq. metres of offices and

laboratories would be required. Based on construction costs of \$300 per sq. metre, the offices would cost an additional \$ 0.3 million. The total cost of Phase 1 would be approximately \$2.55 million and a final cost of around \$11 million. In addition, there will be a requirement for up-grading the rail infrastructure.

There are two proposals for ownership. Either the facility should be owned by the Railways who would lease the land under a 99 year lease to the operators or that a separate company is established to construct and manage the facility and which consists of interested parties. Consideration would be given to BOT (Build Operate Transfer) or similar types of schemes as development methodologies.

Following initial approaches to the EU, it was decided that the construction of the facility was outside the TACIS remit. However, TACIS indicated that it would be prepared to consider funding up to 2 million ECUs for equipment to enable the facility to operate efficiently. This section contains a pre-feasibility appraisal of that proposed investment.

The logistical problems in Section 7.7 highlighted the difficulties created by the lack of co-ordinated control over the movement of cotton, especially along the TRACECA route. The provision of a Consolidation Centre would enable the cotton to be despatched in a more controlled manner, thus easing some of the problems of the Caspian Crossing and the lack of storage facilities in Poti. The methodology used for containerisation of cotton is described in Section 10 in detail and shows that the most cost effective system is to route the bales of cotton by rail or road to a Consolidation Facility and load the containers at that point.

The objectives of the intervention are clear in that it is to provide equipment for the proposed facility to enable it to receive bales of cotton from road or rail wagons, store in batches, grade and then load the cotton into either covered rail wagons or containers. This will require front-end loaders, gantry cranes, skeletal trailers etc.

The proposed beneficiary has not yet been defined. This is because neither the ownership of the facility or the operator has been confirmed. It is proposed that one of the conditionalities should be that the intervention is dependent on the equipment be given to a single party, probably the operating organisation, and that he will be responsible for the maintenance of that equipment.

The budget for the equipment was advised as being 2 million ECU. The Consultant was not provided with a list of the equipment or its proposed purpose. It will, therefore, be necessary to evaluate the justification for each piece of equipment prior to tendering. It is recommended that provision is included for spare parts for the first three years of operation. As the facility is being constructed on a phased basis, it is also recommended that consideration be given to parallel phasing of the equipment intervention.

A number of risks and concerns have been identified in connection with this intervention. These relate to the terminal, rather than the equipment itself. These are:

- institutional aspects
- operational role
- changes in selling procedures
- containerisation

The development of the facility is being sponsored by Uzbek Railways and their joint venture company -Shoshtrans- as part of the promotion of container technology and to combat the threat of road transport. The cotton exportation business is controlled by the Ministry of Foreign and Economic Relations (MFER) and their forwarding organisation -Uzvneshtrans. It is noted that neither MFER or Uzvneshtrans are nominated as sponsors. There are indications that Uzvneshtrans have developed their own proposals for warehousing costing \$10-\$15 million with Turkish designers and which is also subject to Government approval. It is clear that the organisations who control the movement of cotton should be involved in such a development and there should not be duplication of resources.

It has been suggested that the new facility will become an International Centre for cotton with trading within the complex. It is proposed to sell cotton directly ex-the terminal, similar to an “ex-works” basis. There are risks associated with changes in selling terms which are evaluated in more detail in Section 10.5. It is important that the new facility is not dependant on being able to force through changes in selling methodology but is sufficiently flexible to be viable irrespective of such changes.

The “Multi-Modal Centre” role and the sponsorship by both Uzbek Railways and Shoshtrans is linked to the development of containerisation. Chapter 10 indicates that the use of consolidation facilities is essential in the development of container logistics for cotton. However, Chapters 9 and 10 identify significant problems in introducing containerisation from Uzbekistan. The current transport economics do not yet indicate benefits in unitisation close to the point of production. The differential in rail charges on a cost per tonne basis favours the continued use of conventional systems. There may be a case for limited and gradually increasing levels of containerisation if the economics change but it is considered that heavy investment in container handling equipment may not be fully justified at this stage. It is clear that some specialised container handling equipment will be required during Phase 1 but this should be at limited levels until further purchases are justified based on throughputs and performance.

It is clear from the above that there are a number of risks associated with this investment. These could be covered through conditionalities. Possible conditions to mitigate the risks could be that intervention is subject to the following conditionalities:

- construction of Phase 1 of the facility
- the participation by organisations involved in the logistical control of cotton exports
- identification of the equipment beneficiary and training on the use of that equipment
- the provision of servicing facilities
- all purchased equipment being retained on-site

### **8.3 Storage Facilities at Poti**

The cotton on arrival at Poti is off-loaded from the wagons at the site of the old tea warehouses. These consist of four main warehouses with an overall capacity of around 10,000 tonnes. The storage capacity for a cotton warehouse is generally based on a guideline of 1 tonne per sq. metre allowing for stack separation, ventilation and manoeuvring areas/access.

There are two main problems with the current warehouses in Poti

- Condition
- Capacity

As indicated in Part 1, the old tea warehouses have been adapted to handle cotton. They were excess to requirements given the changes in tea market and therefore were identified as having potential when the first shipments of cotton were planned. Particular advantages were that they were rail connected and were outside the port area. However, the internal and external condition of the warehouses are poor and there is no fire protection system. They are not comparable to the special cotton warehouses in Riga or Ilyechovsk and all are in urgent need of refurbishment to bring them up to an acceptable international standard. A fire last year destroyed part of the site and has yet to be fully restored, though some remedial works have been undertaken. The market research indicated that the lack of modern warehouses at Poti acted as a deterrent to its use by many of the major buyers.

The storage capacity at any one time is 10,000 tonnes but the annual capacity is dictated by the stock turnover. The situation at Poti is more complex because of the different types of storage routines:

- Free Storage: first 20 days is free and this tends to represent a minimum storage time
- Transit Storage: the storage time taken to amass sufficient tonnage to charter a vessel for secondary distribution



- **Stock Storage:** longer term storage awaiting more favourable selling conditions - i.e. a rise in market prices

Given these different types of storage within the same facility, it is difficult to calculate the annual capacity. In Western Europe, a cotton stock warehouse would expect a turnover 4 times per year. This would give the facility an annual stock capacity of 40,000 tonnes before constraints occurred. However if 50% were stock storage and 50% transit storage of one month, the annual capacity would rise to 80,000 tonnes. The Consultant's consider that the practical annual capacity of these warehouses is 70-80,000 tonnes per year - i.e. an 7-8 turnover per annum. This accords with the position whereby the facilities have been able to handle 50,000 tonnes so far this year without serious storage problems.

The Decree by the Uzbekistan Cabinet of Ministers plans for 100,000 tonnes to be sent in 1997. Because current volumes are low awaiting the new harvest, this suggest a high throughput late in the year. In addition there is now expected to be significant volumes of Azeri cotton moving through the port requiring at least some transit storage. This would indicate that potential storage problems will occur in Poti in the 1997/8 season. Only limited additional warehousing is available within the port area.

There are proposal for a new 30,000 square metre cotton complex with full facilities, including fire protection systems, to enable Poti to match facilities in either Riga or Ilychevosk. Several parties appear to be involved in seeking funding of \$6-10 million from EBRD for this development. Based on the above estimates, this would provide another 250,000 tonnes of annual storage capacity. However, there are some difficulties regarding the potential terms of a loan involving foreign participation. This has arisen also in respect of the proposed grain terminal at Poti. This suggests that there may be some delays in approval of such a loan. The EBRD procurement procedure and construction lead time suggest that such a complex could not be available until the year 2000.

There is, therefore, a requirement for some remedial action that will enable the Uzbeks to send their cotton to the most advantageous port and for Poti port to attract cotton volumes. A temporary solution would be to refurbish the tea warehouses and in the process increase their capacity. This could be achieved by joining some of them together with larger internal spans and improvements in access. The objective would be to increase the overall capacity by up to 20% as well as refurbishing the buildings. This would enable the facility to handle the projected volumes for next year, though probably not the following year. If the management of the overall logistics were improved, the turnover per warehouse could be increased by only despatching cotton to Poti for transit storage. Any stock storage being either in Uzbekistan or as part of the secondary distribution at Trieste/Mersin/Dubai etc. This could increase the annual capacity up to around 150,000 tonnes per annum.

There is an additional requirement to address the current problem of damaged cargoes. This is taking up vital storage area and constraining throughput. It is considered unlikely that this cotton

could be moved in its current form, even to local users, and is not suitable for export. If a baling machine were provided, this would enable:

- damaged cotton to be stored more efficiently in stacks awaiting sale
- enable the cotton to be sold overseas at preferential rates in hard currency

It is considered that a second-hand baling plant would be adequate for this purpose.

The budget for this type of refurbishment is difficult to estimate without a survey and development of specific site plans. However, based on estimated new warehousing costs in Georgia of around 160 ECU per square metre, a development budget of 1.5 million ECU would enable a significant improvement in site capacity. This outline calculation is based on the following:

• 2,000 cu m new warehouse space x 160 ECU (\$200)	320,000 ECU
• 10,000 cu m refurbishment of building x 100 ECU	1,000,000 ECU
• Planning, design and warehouse management systems	100,000 ECU
• Baling machine	80,000 ECU

The timing of the proposed development would be critical. It is acknowledged that the improvement is required immediately to accommodate this seasons crop. It will be necessary to undertake the work on a phased basis only taking part of a warehouse out of service at any one time, so as to maximise the residual area available for storage. This suggests that the actual work would need to be over a 1-2 year period. The baling machine and the management system are required as soon as possible to assist with current traffic levels.

The immediate beneficiary would be the current owner of the warehouses. However, the main beneficiaries would be the terminal operators, Poti port, and the cotton traders as without some development the cargo would be routed through Riga, Ilyechovsk or direct by rail to either Europe or China, thus avoiding Georgia and TRACECA.

The FOB costs at Poti are estimated to be in the region of \$20 per tonne (see section 9). The refurbishment of the warehousing could increase the storage capacity by 50-70,000 tonnes per annum thus generating \$1-1.4m revenue per annum for local organisations. The warehousing and handling charges are confidential and were not available. Assuming they were around \$5 per tonne, the annual income would be \$300,000 plus stock storage charges and that there is a 50% profit margin on handling and extra storage charges, the potential investment payback period would be around 7.5 years and well within the 20 years often allowed for new buildings. This outline estimate

indicates that there should be adequate costs benefits to support such an investment, though more detailed calculations might be required in support of an approval. The baling plant would be expected to have a shorter payback given that it would enable income to be generated for what is currently a waste product.

It is considered that any loans or grants should be subject to certain conditionality clauses. These might include the following:

- subject to submission of detailed drawings and specifications to international standard
- subject to an exclusivity clause that the facility will only be used for the storage of cotton, irrespective of country of source, over a nominated period
- subject to special customs agreement as a fully bonded transit warehouse - i.e. no duties for transit cargoes
- subject to an agreed charges schedule for the next 5 years with special conditions to allow change for unforeseen changes in local conditions and the national economic environment

These conditions are required to ensure that the finance is used exclusively for the cotton development and that it is operated on a commercial basis.

The proposed development does contain a number of risks which were considered:

- **Loss of the cotton traffic:** If the costs of using the Port of Poti became too high, the traffic could be redirected to other ports. The risks are external, in that the cost of movement to the port became too high, or internal if the FOB charges increased significantly. The external risk cannot be mitigated except by Government pressure to ensure that TRACECA transport costs remain at competitive levels versus the other corridors. The users consider that the internal risks are greater given the situation at Riga and Ilyechovsk where cost have risen and crime intervened. Whilst there is no immediate evidence that this will take place, the monopolistic situation on warehousing at Poti in the short term creates an environment which could lead to abuse. The above conditionalities are required to mitigate this risk.
- **Containerisation:** If substantial quantities of cotton are containerised in Uzbekistan, this would reduce the requirement for storage at the FOB ports. The situation as described in Sections 9 and 10 indicate that containerisation in the short term is not expected to achieve significant penetration of the cotton market. The current system of primary and secondary distribution is expected to remain for the next 5 years and there should be still some shipments requiring storage in the longer term, such as the bulk movements to Brazil.
- **New Facilities:** If the new facilities are approved by the EBRD loan, then there could be a potential excess of storage space. The new specialised facilities would attract the buyers and therefore the cotton would be diverted towards that development. However, if this facility only has a capacity of around 250,000 tonnes per year there will still be a need for additional storage if Uzbekistan sends an increasing amount via Poti as per the Presidential Decree. In addition, there are volumes from Azerbaijan and traffic from the other Central Asian states could be attracted.

Given these circumstances, it is considered that the risks of the grant being non-effective are minimal.

The monitoring of the investment would take two forms:

- monitoring and supervision of the finance during the design and construction phases
- monitoring the use of the facility post construction in terms of tonnage throughput

Both types of monitoring could be easily undertaken on a periodic basis.

#### **8.4 Port Handling Facilities at Poti**

Part 1 highlighted the actual and perceived shortcomings of the Port of Poti when compared to alternative FOB ports. As indicated, the performance has improved considerably mainly due to improvements in labour performance. There has been no specific investment in handling equipment. This will be required if further improvements in cotton handling performance are to be achieved.

There is general recognition that substantial investments are required at the Port of Poti. This has been the subject of a number of studies in recent years and discussions with EBRD. In the context of this project, the emphasis has been on potential minor investments in the port which would specifically assist in the more efficient handling of cotton. Four specific areas have been assessed:

- loading methodology
- loading equipment
- power supply
- on-board handling

There are proposals to introduce a special strapping device which links 6 bales together. This would allow 36 bales to be lifted in a single lift of 7.5 tonnes, thus theoretically increasing the loading rate considerably. This method has been proposed by German specialists. The Consultant does not consider that this system will be cost effective, except under certain circumstances. There are anticipated to be practical difficulties in the initial strapping at the warehouse and loading onto the road vehicle, which uses a different loading configuration at present. Whilst the overall lift is within the capacity of the shore crane at Poti, it is considered that insufficient notice has been taken of the type of vessels used and whether the strapped bales can be lifted as a single unit at the port of delivery. The main vessels currently used are the Volga-Don type and the limited space within the holds is such that it restricts the manoeuvring of such large lifts. The recommended device is best suited to larger vessels with ships gear (minimum 10 tonnes) and larger hatches/holds. No investment is recommended until the trials prove conclusively that there is a significant improvement in handling speeds and a reduction in unit handling costs.

The general condition of the quayside cranes at Poti is poor and they are in urgent need of refurbishment. The cotton is normally loaded at Berth No 9, and on an adjacent berth when more than one vessel is present. This operation normally requires 2 Takraf 10 tonne cranes per Volga-Don type vessel, though 3 or 4 at one vessel is technically possible during the initial loading. These cranes suffer from downtime due to their poor condition. If these were refurbished, their downtime would be reduced, thus resulting in improved loading performance with the higher availability.

It is recognised that to undertake a full refurbishment programme could cost up to \$1.5 million per crane. This is outside the scope of any TACIS funding. What is proposed is an inspection and some limited works to improve the reliability of these cranes, pending more major works being undertaken as part of the overall re-development of the port. The proposed budget is 400,000 ECU consisting of the following:

- |                           |                            |   |             |
|---------------------------|----------------------------|---|-------------|
| • technical inspection    | 20,000 ECU                 | = | 20,000 ECU  |
| • temporary refurbishment | 95,000 ECU per crane x 4 + | = | 380,000 ECU |

An additional factor which affects the crane performance is the reliability of the central power supply. There is a stand-by generator which produces 1.2 megawatts, but this consumes 1 tonne of diesel per hour. Inspection of the work sheets indicates that loss of power, particularly at night, is a significant factor in the slow turnaround of vessels. The smaller vessels used for the carriage of cotton have no ship cranes or derricks and therefore are totally dependant on shore facilities. Their ship's generators are not suitable for a power "take-off" to supply the cranes.

It is recommended that consideration be given to the supply of a mobile generator for Berth No 9 with the appropriate capacity to supply up to two Takraf cranes. The proposed budget for such a unit would be 50,000 ECU.

The on-board handling operation requires the use of small forklift trucks, up to 1 tonne capacity, for loading into the areas not directly accessible by the cranes. This is a particular problem with the larger vessels for the bulk shipments to Brazil, Dubai etc. rather than the smaller vessels with wider hatches. The Port of Poti has insufficient transverse handling equipment and therefore fork lift trucks are often not available.

It is recommended that consideration is given to the supply of 2-4 small diesel forklift trucks specifically for this task to speed up the turnaround of vessels, particularly the larger ships. The proposed budget would be 50,000 ECU.

The timing of this intervention could affect the ability of the port to handle the 1997/8 cotton season traffic from Uzbekistan and Azerbaijan. The projected tonnages will result in an increase in the numbers of vessels calling and therefore an improvement in berth utilisation is critical. This would

indicate that the crane inspection should be undertaken as soon as possible, with the remainder of the investment during 1998.

The immediate beneficiary would be the Port Authority or operator, dependant on the results of the current restructuring within the Maritime Department in Georgia. However, the other beneficiaries would be the port labour, the local interests involved in the movement of cotton, the buyers and the Government of Uzbekistan through its ability to despatch more cotton via Poti than would otherwise be possible.

The cost benefits arise from the intervention enabling the port to handle the cotton more efficiently and therefore attract additional volumes through the port, which would otherwise be diverted to competing ports. The investment will generate additional income from cargo handling and berthing charges, as well as reduce the demurrage payments on chartered vessels due to the faster turnaround. Assuming a loading charges of \$10 per tonne and charter rates of \$2,500 per day, the additional income and savings in berthing time would easily justify an investment of \$0.5m in equipment.

It is considered that any loans or grants should be subject to conditionality clauses. These might include the following:

- subject to Berth No 9 (or alternative) being designated either as a dedicated or a “priority” cotton berth such that it was used solely for cotton when vessels were required to load that traffic
- subject to the generator and forklifts only being used at that designated berth and solely in connection with the loading of cotton

The objective of these conditions are that the intervention is used exclusively in connection with cotton, therefore avoiding any conflict with development loans from other organisations and ensuring that the equipment is not transferred to other parts of the port.

The main risk associated with the development is that cotton will not be sent via Poti and will revert to traditional routes. The cost benefits section of this report clearly indicates that Poti is the most economical routing for the Uzbek sellers and that the traffic would only be lost if the port failed to provide the required performance. Another risk would be that in the event of a poor cotton crop that there would be significantly lower cotton movements to the west, as opposed to the Daewoo shipments via Druzbha. These risks are mitigated by the fact that although the investment is specifically in relation to cotton handling the cranes, generator and fork trucks could be used for other purposes in the unlikely event that cotton shipments were to decline. The overall risks associated with the intervention can therefore be considered as small.

The monitoring of the intervention could be undertaken by analysis of the vessel loading reports. These record tonnages handled per shift and the causes of any delays, such as crane breakdown or

power failure. This would indicate the effectiveness of the intervention when compared against pre-intervention data.

## 8.5 Investment Summary

The proposed investment requirements recommended for consideration of TACIS Funding in connection with the movement of cotton from Uzbekistan along the TRACECA route are shown in Table 7:

Table 7 - Proposed Capital Investments in Cotton Logistics

<i>Country</i>	<i>Nature of Intervention</i>	<i>Cost ECU</i>
Uzbekistan	Handling Equipment for Consolidation Warehouse	2,000,000
Georgia	Refurbishment of Tea Warehouses and installation of a storage management control system	1,500,000
	Inspection and refurbishment of 4 Takraf cranes	400,000
	One mobile generator	50,000
	2-4 1 tonne fork lift trucks	50,000
	<b>TOTAL</b>	<b>4,000,00 ECU</b>



## 9. Cost Benefits of Containerisation via TRACECA

This section examines the costs of moving cotton fibre from the ginneries through to the current points of sale, FOB or Free at Border, and onto the end-user. This logistics chain was described in Sections 7.2-7.6. In the context of containerisation, it is important to examine the complete movement from the Point of Despatch to the factory gate of the end user (door-to-door) as containerisation is based on the concept of multi-modal logistics. The cargo stays as a single integral unit irrespective of the transport mode being used. It should be compared with the conventional transportation systems involving primary and secondary distribution with transit storage and handling between the different sections of the journey.

This chapter is composed of three sections:

- Costs of the conventional logistics chain
- Costs of the containerisation logistics chain
- Cost benefit appraisal of the two systems

Although the project was directed towards the TRACECA corridor, the relevant costs incurred when using other routes have been included.

It is important to appreciate that the costs used are indicative only. The actual costs of moving the cotton via the various routes were considered to be commercially sensitive and therefore confidential. It should be noted that cotton is usually conveyed to the "Point of Sale" as state cargo being controlled by state organisations. It is assumed that special contractual conditions exist and therefore would be expected to be slightly below those quoted. The costs were based on quotations, extensive interviews with a variety of organisations in the region and discussions with members of the other TRACECA projects concerned with logistical aspects. However, the costs are only estimates and should be treated accordingly but present an indication of the current situation.

### 9.1 Cost of the Conventional Logistics Chain

The costs are given for each of the different links in the logistics chain, as described in sections 7.2-7.6.

#### *Transportation from the Ginneries to the Loading Point*

48 ginneries have no direct loading railhead and therefore have to transport the bales to the designated railhead. The estimated cost per tonne kilometre for a two-axle vehicle in Uzbekistan is around \$0.31 tonne kilometre (Source: ADB Road Rehabilitation Project and TRACECA Pavement Management Systems Project). However, checks were made on the rates paid to the ginneries around Bukhara and these are currently only \$0.15-0.16 per tonne kilometre. Many of these vehicles are old and therefore have minimum residual capital costs.

No detailed analysis has been made of the distances from the non-connected rail ginneries to the depots but for comparative purposes it has been assumed that the average distance is 50 kilometres and 30% of production originates from these non-rail connected ginneries.

The cost of the transport from the ginneries is estimated at :

$50 \text{ kms} \times \$0.155 = \$ 7.75 \text{ per tonne} \times 0.3 = \$2.33 \text{ per tonne average for total cotton movements}$

### *Preparation of Wagons*

The rail wagons have to be checked and lined with kraft paper bonded with special glue. The charge for this operation in the Bukhara region is 4392 Sum per wagon. Based on the official exchange rate of 65 Sum = \$1 and a loading of 51.6 tonnes per wagon, the cost of wagon preparation is estimated at:

\$67.57 per wagon or \$1.31 per tonne.

### *Loading of Rail Wagons*

The prepared rail wagons are either loaded at the ginneries or at the designated stations. No prices were available for this operation and therefore estimates have been used. In the case of the directly connected ginneries, it may be that this is free given that ginnery labour is used for this activity. For calculation purposes, it has been assumed that there is a cost for loading even with own labour. Based on handling costs for discharge of the wagons at the FOB port, the following estimates have been used:

Loading cost at rail connected ginneries	\$2.50 per tonne
Initial loading of trucks at non rail connected ginneries	\$2.00 per tonne
Unloading off trucks and reloading in rail wagons for non-rail ginneries	\$4.00 per tonne
Average cost of loading at all plants (70% ex-rail connected ginneries)	\$3.55 per tonne

### *Movement of wagons to Marshalling Yards and Borders*

The wagons when loaded are moved in small groups to the central marshalling yards. The average distance was indicated as around 120 kilometres. The costs are estimated on the following basis:

- average cost of haulage of a single rail wagon through various marshalling operations is 70% more expensive than the haulage of an identical wagon on a through train. This has been demonstrated in several studies and can be used as a calculation factor
- the minimum cost for a long train (28-50 wagons) made of wagons for the same destination running under normal conditions is estimated at \$0.015 per tonne kilometre (Initial estimates from TRACECA Railways Inter-State Tariff and Timetable Project)

Using these calculations the cost of moving the wagons to the marshalling yard would be :

$$120 \text{ km} \times \$0.015 \times 1.7(\text{marshalling factor}) \times 1.2 (\text{profit factor}) = 3.67 \text{ per tonne}$$

The calculations for the movement to the border has been based on two of the key marshalling yards:

- Tashkent --> Tchengeldy (Kazakhstan) : 79 kms in 1 hour 36 mins
- Bukhara --->Farap (Turkmenistan): 110 kms in 2 hours 15 mins

Based on the \$0.015 per kilometre plus 20% profit factor the cost of the movement would be as follows:

To the northern border: 79 kms x \$0.015 x 1.2 = \$ 1.42 per tonne

To the southern border: 110kms x \$0.015 x 1.2 = \$ 1.98 per tonne

It should be noted that these are the marshalling yards closest to the borders and the costs would be higher from Urgench and Samarkand.

#### *Summary of Total Logistical Costs in Uzbekistan*

The estimated costs from the above sections are summarised in Table 8 as follows:

Table 8 : Logistical Costs of cotton traffic in Uzbekistan

<i>Activity</i>	<i>\$ per wagon</i>	<i>\$ per tonne</i>
Transport from ginneries to the station	120.23	2.33
Preparation of wagons	67.57	1.31
Loading of rail wagons	152.22	3.55
Movement to Marshalling yard	189.37	3.67
Movement to Border	102.17	1.98
<b>Total</b>	<b>631.56</b>	<b>\$12.86</b>

#### *Despatch from the border to the FOB Port*

The charges for the movement of cotton from the Uzbekistan borders to the various FOB ports and FOR borders was obtained. There are shown in Table 9:

Table 9: Transport Charges from “FOR Uzbek Border” to “FOB named Port”  
(Based on 48.9 tonne minimum load per wagon)

<i>Route</i>	<i>Activity</i>	<i>From FOR Farap \$ per tonne</i>	<i>From FOR Tchengeny \$ per tonne</i>
Poti	Up to FOR Poti	40.08	53.58
	FOB charges	19.00	19.00
	Total Costs	59.08	72.58
Riga	Up to FOR Riga	86.28	72.78
	FOB charges	24.40	24.40
	Total Costs	110.68	97.18
Ilyechovsk	Up to FOR Ilyechovsk	99.46	85.96
	FOB Charges	19.00	19.00
	Total Costs	118.46	104.96
Brest	Up to FOR Brest	96.33	82.83
	Change of gauge+transit	15.00	15.00
	Total Costs	111.33	97.83
Chop	Up to FOR Chop	103.15	89.65
	Change of gauge +transit	15.00	15.00
	Total Costs	118.15	104.65

Source: Uzmarkazimpex

Note : the cost of an internal movement between Farap and Tchengeny has been estimated at \$13.50 per tonne (794kms x0.015x1.2)

The external transportation costs up to FOB show that:

- Poti is 39% cheaper than Riga
- Poti is 44% cheaper than Ilyechovsk

Based on the cheapest routing - i.e. \$59.08 to Poti, \$97.18 Riga and \$104.96 Illyechovsk.

### *Secondary Distribution Costs*

The cost of secondary distribution will be dependent on the location of the final destination. The buyers indicated an allowance of \$100-120 per tonne is made for this activity. It is estimated that approximately 50% of this allowance is for the movement to the nearest port to the end-user and 50% for the final delivery and sundry costs. The methodology used in secondary distribution is not determined by the way in which the cargo was presented at the FOB port. Shipments sent via Riga are usually containerised for the final delivery, or occasional into road trucks for surface delivery. Shipments sent via Poti are usually shipped out in bulk, but could be on-forwarded in containers if required and appropriate services were available. Therefore, for initial evaluation purposes, there is no cost differentials between the two methodologies used.

The cost of unstuffing from rail and reloading into a container at Riga is estimated at \$7.14 per tonne. This activity is not currently taking place in Poti, but would be expected to cost \$5-6 per tonne. The question as to who pays the stuffing charges of containers on FOB shipments is often the subject of dispute. For calculation purposes, it has been assumed that the buyers pays and an appropriate deduction will be made for through container shipments.

### *Estimated Total Costs of conventional Uzbek Cotton shipments from the Ginneries to the End-user*

The estimated costs for the shipment of cotton using standard rail wagons from the ginneries through to the FOB port and then on-carriage by either conventional or containerised methods are as follows:

• Logistical Costs in Uzbekistan	\$12.86 per tonne
• Border to FOB vessel Poti	\$59.08 per tonne
• Secondary distribution	\$100.00 per tonne
• Total	\$171.94 per tonne

## **9.2 Cost of the Containerisation Logistics Chain**

The costs for each of the different links in this logistics chain are as follows:

### *Transportation from the Ginneries to the Container Terminal*

The calculation of the costs associated with containerisation are based on the use of a consolidation facility at Bukhara or Tashkent. There are four potential methods of moving the cotton from the ginneries to the main rail facility

- Bringing the cotton by road to the terminal and stuffing the container within the facility. The estimated costs would be as follows:

Loading of the truck at the ginnery	= \$ 2.00 per tonne
Road Transport 50 kms x \$0.15	= \$ 7.50 per tonne
Unloading vehicle and stuffing container	= \$ 5.00 per tonne
Lift of container onto railwagon	= \$ 3.67 per tonne
Total	= \$18.17 per tonne

- Bringing the cotton by rail to the terminal and stuffing the container within the facility. The estimated costs would be as follows:

Loading of the rail wagon at the ginnery	= \$ 2.50 per tonne
Rail transport to 100kms x \$0.015x1.7x1.2	= \$ 3.06 per tonne
Unloading wagon and reloading to container	= \$ 5.00 per tonne
Transfer of container onto rail wagon	= \$ 3.67 per tonne
Total	= \$14.23 per tonne

- Take the container by road to the ginnery and load unit on-site (based on Shoshtrans rates)

Road transport 50 kms x \$0.18	= \$ 8.96 per tonne
Loading with own labour at ginnery	= \$ 3.00 per tonne
Transfer of container onto the rail wagon	= \$ 3.67 per tonne
Total	= \$15.63 per tonne

- Take the empty container on a rail wagon to the ginnery and load there (technically difficult)

Loading of container onto rail wagon	= \$ 3.67 per tonne
Rail transport 100kms x \$0.015x1.7x1.2	= \$ 3.06 per tonne
Loading with own labour at the ginnery	= \$ 3.00 per tonne
Total	= \$ 9.73 per tonne

These calculations assume that:

- the ginneries have slightly lower stuffing charges than a consolidation depot as labour is part of the cotton establishment and managed accordingly
- the unit costs of loading containers is slightly higher than for rail wagons as this is a slower operation - one wagon as opposed to 4 containers
- larger newer road vehicles would be required to transport containers and therefore higher cost per tonne/kilometre because of the extra capital cost of the larger vehicles

- flat wagons are available to be transported to the ginneries and that the cotton could be loaded whilst on the rail wagon (see later section)
- road would be used for the closer ginneries (average 50 kms) and rail for the longer distance (average 100kms)
- The terminal handling charges for handling containers at a depot were indicated at \$100 per container, as quoted by Shoshtrans. This could be reduced if significant numbers of containers were being handled or if the specialised handling equipment were purchased under preferential terms. It has been assumed that these situations exist and the cost would be around \$50.

For calculation purposes, a 30/70% mix of the first two options has been used as it similar to the methodology involved in the Daewoo contract. This would give a cost of \$15.41per tonne.

#### *Transportation from the Container Loading Point to the Marshalling Yard*

The above calculations assume that the ginnery is relatively close to a consolidation depot. In the case of the Daewoo contract there are 5 consolidation points:

- Bukhara
- Samarkand
- Andijan
- Urgench
- Surkhandarya

It is necessary to make an allowance for the shunting necessary to form up “block” trains for the same destination. The indicated cost for this type of operation was \$0.015 per tonne kilometre x 1.7 shunting factor x1.2 profit factor. However, this was based on 50 tonne 14.4 metre wagons. The weight per wagon with containers would be only 40.5 tonnes of cargo (3x20ft or 1x20ft and 1x40ft).

The cost of the internal transfer would be as follows:

$120\text{kms} \times \$0.015 \times 1.7 \times 1.2 \times 50 \text{ tonnes} = \$183.60 \text{ per wagon} = \$4.53 \text{ for } 40.5 \text{ tonnes per wagon}$

This assumes no differential in movement costs between the 14.4 metre covered wagon and the 18-19 metre flat wagon.

#### *Summary of Total Logistical Costs in Uzbekistan*

The estimated costs from the above sections up to free on railwagon consolidation depot are shown in Table 10:

Table 10: Logistical Costs for containerised cotton in Uzbekistan

<i>Activity</i>	<i>\$ per container</i>	<i>\$ per tonne</i>
Transport and loading to consolidation depot	208	15.41
Movement to main marshalling yard	61	4.53
<b>Total</b>	<b>269</b>	<b>19.94</b>

*Transportation from the Container Terminal to the FOB Port*

The rates shown in Table 11 are those contained within the TRACECA Multi-Modal Project Report based on discussions with the rail authorities:

Table 11: Container Rates from Tashkent to FOB and DAF Points

<i>Route</i>	<i>\$ per 20 ft unit</i>	<i>\$ per tonne</i>	<i>\$ per 40 ft unit</i>	<i>\$ per tonne</i>
Tashkent - Poti	2100	155.55	3150	116.66
Tashkent - Riga	2000	148.15	3400	125.93
Tashkent - Brest	2000	148.15	3500	129.63
Tashkent - Chop	2200	162.96	3900	144.44

Source: Traceca Multi-Modal Project

It is accepted that Uzvneshtrans should be able to negotiate special terms which would be below those quoted. If the cotton were to be sold ex-the Consolidation Warehouse the movement would theoretically be for buyers account and would therefore become a normal commercial movement and be subject to these rates. It is expected that some compromise would be reached to obtain preferential rates as discussed in Section 10.

*Transportation from the FOB or FOR Point to the End- user*

It has been assumed that the secondary distribution costs would be the same as for conventional systems, though there would be some savings in FOB costs (estimated at 50%). A port handling charge of \$100 per container has been assumed.



*Estimated Total Costs of a Containerised Cotton shipment from the Ginneries to the End-User*

The estimated costs for the shipment of cotton in 20 ft containers from the ginneries through to the FOB port and then on-carriage are as follows:

\$ per tonne

- Logistical Costs in Uzbekistan \$ 19.94 per tonne
- Consolidation Depot to Poti \$155.55 per tonne
- Secondary Distribution \$100.00 per tonne
- FOB costs for containers \$ 7.50 per tonne
- Total \$282.99 per tonne

**9.3 Cost Benefit Appraisal**

The initial appraisal is based on the current costs of using either conventional or containerisation systems based on current levels of indicative costs and charges where known. These are shown in Table 12 below:

Table 12: Comparison of Logistical Costs for Uzbekistan Cotton

Costs in \$ per tonne

<i>Route</i>	<i>Activity</i>	<i>Conventional</i>	<i>Containerised 20ft unit</i>	<i>Premium for Containerisation</i>
Via Poti	Costs in Uzbekistan	12.86	19.94	7.08
	Rail Shipment	40.08	155.55	115.47
	FOB	19.00	7.50	(11.50)
	Secondary Distribution	100.00	100.00	0.00
	<b>Total</b>	<b>171.94</b>	<b>282.99</b>	<b>110.05</b>
Via Riga	Costs in Uzbekistan	12.86	19.94	7.08
	Rail Shipment	86.28	148.15	61.87
	FOB	24.40	7.50	(16.90)
	Secondary Distribution	100.00	100.00	0.00
	<b>Total</b>	<b>223.54</b>	<b>275.59</b>	<b>52.05</b>

Table 12 continued

Via Brest	Costs in Uzbekistan	12.86	19.94	7.08
	Rail shipment	96.33	148.15	51.82
	Gauge change + transit	15.00	7.50	(7.50)
	Secondary Distribution	100.00	100.00	0.00
	<b>Total</b>	<b>224.19</b>	<b>275.59</b>	<b>51.40</b>
Via Chop	Costs in Uzbekistan	12.86	19.94	7.08
	Rail Shipment	103.15	162.96	59.81
	Gauge change + transit	15.00	7.50	(7.50)
	Secondary Distribution	100.00	100.00	0.00
	<b>Total</b>	<b>231.01</b>	<b>290.40</b>	<b>59.39</b>

These figures clearly indicate that that it is significantly more expensive to despatch cotton in containers than use the current system of bulk shipments in rail covered wagons to the FOB port or to the FOR border. As indicated in Part 1, the buyers consider that the transport costs used by buyers assume \$70-\$100 to the FOB port for sellers account and \$100-\$120 for secondary distribution to their account. This total of \$170-\$220 is exceeded for all container movements making it uncompetitive relative to other international sources or compared to use of current systems.

The Presidential Decree requires an increasing tonnage of cotton to be transported in containers. The development of the Bukhara Logistical Centre by the railways is also based on the increased use of containerisation. It has therefore been necessary to undertake a sensitivity appraisal and cross-check on the logic to ascertain the reliability of the costings, in view of the absence of accurate data from the carriers. This includes an evaluation of the potential cost benefits from containerisation.

#### *Cost Benefits within Uzbekistan*

The cost of movement from the ginneries to the railhead were as follows:

- \$10.88 per tonne conventional shipment ( less movement cost to border)
- \$19.94 per tonne containerised shipment

These calculations indicated that it is 1.8 times more expensive to move the cargo to the main marshalling yards in containers than using conventional methodology.

The reasons why this is so are as follows:

- Direct rail pick-up at the ginneries is the cheapest method of collection. The cost of a direct pick-up of cotton with covered wagons was estimated at \$2.50 loading + \$ 3.67 rail movement + \$1.31 wagon preparation = \$7.48. The equivalent for containers was \$2.50 loading + \$3.06 rail movement + \$5.00 cargo transfer at depot + \$3.67 lifting charge = \$14.23. There are extra charges arising from the double handling at the consolidation depot.
- For technical reasons (see next chapter), it is almost impossible to load containers with cotton whilst on the rail wagon. This means that the optimum cost system cannot be used. It is considered that localised movements would move to a consolidation depot by road, rather than by rail on a conventional trough rail movement , and that rail would only be used for the longer distance feeder movements into the depot.

Sensitivities have been undertaken on adjusting the amount of production from the rail connected ginneries, different loading costs per tonne and lower rail charges. However, because the initial difference is so large the calculations still show that it is more expensive to move the cotton in containers than in covered wagons because of the three key factors:

- transport economies of scale - movement of 51.6 tonne lots as opposed to multiples of 13.5 tonne lots - 51.6 tonnes takes up same wagon space as 27 tonnes in containers
- additional lifting charges for containers and transfers of the cargo at the depot
- problems of loading containers at the ginnery and therefore having to use the more expensive road collection system to selected consolidation points and longer distance rail movements to the strategically placed depots.

There are no specific cost reductions in containerisation of the activities within Uzbekistan, other than a reduction in the preparation of wagons - \$1.31 - which represents only a minor saving in relation to the overall costs.

The costs above show a differential of \$9.06 per tonne. Sensitivities have been undertaken on the various costs but containerisation is still expected to be around \$10 or 80% more than that of conventional shipments ex-the ginneries based on existing pricing. However, the logistical costs incurred within Uzbekistan represent less than 10% of the overall costs and less than 0.75% of the price of the sale cotton. It is not considered that this price differential is critical to the future development of containerisation.

### *Costs Benefits from Uzbekistan to the FOB Port or FOR Border*

The cost of movement from the marshalling yards to FOB or DAF borders are shown in Table 13.

Table 13 - Logistical Costs from Central Marshalling Yard/Consolidation Depot to Selected Points  
(\$ per tonne)

	<i>FOB Poti</i>	<i>FOB Riga</i>	<i>DAF Brest</i>	<i>DAF Chop</i>
Conventional	61.06	99.16	99.81	106.63
Containerised	163.05	155.65	155.65	170.46
Differential	101.99	56.49	55.84	63.83

It is evident that with current pricing structures there is a significant unit price differential which makes containerisation an expensive option.

The present MTT commercial charging systems for rail transport from Uzbekistan to Europe favours the use of the northern route via Russia to the detriment of the TRACECA corridor. This is because the methodology used is based on the principle of the longer the distance the lower the unit cost per tonne kilometre. This is shown as follows:

<i>Route</i>	<i>Distance kms</i>	<i>\$ Price per wagon</i>	<i>\$ per tonne/km</i>
Tashkent - Brest	4236	3500	0.016
Tashkent - Riga	4286	3800	0.017
Tashkent - Poti	3017	3150	0.020

(Source: Multi-Modal Project)

It can be seen that Poti is still the most economic because of the lower distance. However, cotton is currently being moved by state organisations with special arrangements and there is a significant difference in tariffs for cotton carried in conventional covered wagons:

<i>Route</i>	<i>Distance kms</i>	<i>\$ Price per wagon</i>	<i>\$ per tonne/km</i>
Tchengeldy - Brest	4157	4274	0.020
Tchengeldy - Riga	4207	3755	0.017
Farap - Poti	2302	2068	0.017

(Source: Uzmarkazimpex)

This contract tariff structure used for the conventional movement of cotton is therefore the opposite to the MTT commercial tariff. The current indicative prices for movement of containers is similar to the MTT tariff in that the unit charges are higher for the shorter distances, such as to Poti, but at a much higher level.

(based on 3x20ft containers per wagon)

<i>Route</i>	<i>Distance kms</i>	<i>\$ Price per wagon</i>	<i>\$ per tonne/km</i>
Tashkent - Brest	4236	6000	0.035
Tashkent - Riga	4286	6000	0.035
Tashkent - Poti	3017	6300	0.050

(Source: Multi-Modal Project)

The container tariff is similar to the MTT commercial tariff in that the shorter distance are more expensive per tonne kilometre and therefore current tariffs act as a potential disincentive to using TRACECA. The unit costs are approximately 100% higher when cargo is in containers than conventional to Riga and Brest and 150% more to Poti. If a 40 ft and 20ft combination per wagon is used for Poti, the rate would be \$0.031 or 55% more expensive than covered wagons (see later section).

There are considered to be four main reasons for this situation:

- transport economies of scale - 51.6 tonnes in 14 metres of wagon as opposed to only 40.5 tonnes in containers in 19 metres of rail wagon
- the use of different tariff systems
- cotton is volumetric cargo and therefore the weight per container or 6 metres of wagon is low which has disadvantages when tariffs are based on weight
- costing are based on individual container loads without quantity discounting for large volumes such as those currently available for conventional cotton movement

It is evident that the current difference in the long distance rail costs are so large that there is no financial benefit in containerisation of the primary distribution at this stage. Action will be needed in this respect to make containerisation more attractive.

#### *Cost Benefits of Containerisation with Door-to-Door Movements*

It is generally accepted that containerisation is unlikely to show any benefits unless savings could be generated by combining the primary and secondary distribution into a door-to-door movement, thus saving intermediate handling and storage costs. The problem is that the on-carriage from FOB the port to the end-user is the same whether it arrived at the port loose from Uzbekistan or arrived in a container on a through basis. The reason the cargo being containerised at the port for secondary distribution is based solely on the maritime economics. The carriers are not yet offering preferential rates for containerising at the point of origin. This is mainly because of the perceived financial risks involved and the current state of market development.

In practice, the rates quoted for containerised movements from Uzbekistan to Europe represent the sum of the sector or activity costs. In more developed markets a door-to-door rate is lower than the sum of the logistical sector costs.

Although there are currently no cost benefits on transportation costs, the through-movement would enable savings to be made on other aspects: These are as follows:

- **Handling Charges at the Port:** The FOB costs at Poti are \$19.00 per tonne. This covers the discharge of the cotton from the rail wagon storage for the first 21 days in the warehouse and the transport to the quay and loading on board the vessel. Direct handling of the container would probably cost around \$100 per 20ft unit or \$7.50 per tonne. This saving of \$11.50 has been included in the calculation in Table 11.
- **Storage Charges:** The storage charges are estimated at around \$0.40 per tonne per day. The seller probably has to absorb \$7-\$10 per tonne for storage prices out of the FOB sale price, as this is not recoverable in the \$19 FOB charge (which is assumed to be handling costs only). After day 21, the buyer has to pay until he has sufficient quantity to load a chartered vessel. It is assumed that the buyer will attempt to minimise his storage time, unless he can obtain a higher price for the cotton, and thus recover the additional storage cost by extra income. Storage costs are lower in the CIS than in Europe and therefore for them it will be cheaper to store at the ports than close to the end-user. With containerisation, the unit would not be expected to move until required by the end-user. As a result, with door-to-door containerisation the storage would be expected to move from the FOB port back closer to the point of production. This will mean a saving in external port storage charges to the seller but extra storage costs within Uzbekistan. Warehousing in Uzbekistan could be paid in Sum with consequent savings in foreign currency, though how much is not available due to the commercial sensitivity of cotton pricing. For example if the unit cost of storage in Uzbekistan were 25% below that of port storage and 10% savings on currency transfers were made, this would save the sellers \$2.5-\$3.50 per tonne. It should be noted that containerisation in itself does not totally obviate the need for warehousing. It only alters the location where the storage will take place, either at the point of origin or at the destination, and any savings are only in relation to the storage cost differentials in the various location.
- **Damage to Cargo:** The more the cargo is handled the greater the risk of damage. If the cargo were loaded direct into containers at the ginneries or rail stations, theoretically only undamaged bales would be loaded. Current levels of damage in transit are estimated at around 2% total loss with up to 5% damaged. If a bailing plant were provided the damaged bales could be re-cycled and sold off at discount price - for example at 50% of FOB price. Based on a current FOB price for Uzbekistan Middling of \$1230 per tonne, the overall saving via containerisation would be 50% of 3% and 100% of 2% = \$18.45 + \$24.60 = \$43.05 per tonne. This would represent a significant saving and contribute to the extra costs of containerisation. However, it is considered that some of the cotton arriving damaged in Poti was loaded in damaged condition thus raising the percentage and that the damage and unrecoverable percentages are falling due to improved

handling. It is still believed that some damaged cargo may also be loaded in the containers or damaged in transit with shunting and lifting movement. In these circumstances, the saving is unlikely to exceed \$20 per tonne.

These assessments suggest that savings of up to \$25 per tonne could be achieved by moving from a conventional system to containerised shipments. However, this is still not sufficient to cover the additional costs of using containers, particularly due to the higher rail costs. It is, therefore, concluded that under current conditions and tariffs there is no cost benefit in moving cotton in containers. Containerisation would cost significantly more and could make Uzbekistan cotton uncompetitive relative to other sources. Section 10 examines what changes could be examined to make containerisation a more realistic option.

It is important to note that this section indicates that containerisation is not attractive based on current charges specifically applicable to cotton logistics. It is considered that other types of import and export commodities from and to other destinations would be an attractive proposition for containerisation, particularly if they involve a maritime movement. It is clear that there will be increased use of the container mode for trade with Uzbekistan. Changes in current conditions and charges could mean that containerisation of cotton also becomes more viable.

## 10. Containerisation

The original proposal was to examine the technical problems associated with containerisation. Due to the current financial deterrents identified in Section 9, it was also necessary to identify what action or policies would be required to make containerisation a more attractive transport methodology for cotton and indicate the associated risks. This is particularly important in the context of investment in a Logistics Centre (Section 8), which is partially dependent on containerised cotton movements.

### 10.1 Current Containerisation

Containerisation of cotton has already commenced in respect of the Daewoo contract. An evaluation has been made of the logistics associated with these movements, as the same methodology could be used for westbound traffic.

Daewoo Motors has a car assembly plant at Asaka in the Fergana Valley in the north east of Uzbekistan. Approximately 1500 TEU (twenty foot equivalents) containers per month are imported from Korea containing car parts, electronics and other equipment. These containers are on long lease from Sino Trans (Kunyoung) who in turn have leased from UCS, Tiphook and other international container leasing companies. These mainly consist of 20 ft units with only a small percentage of 40 ft units. Since these are leased units with a daily hire rate, rather than “one-way boxes”, it is necessary to return these units to Korea. In 1996, this activity was indicated as costing \$1100 per empty box to Pusan via Druzbha.

As a major international trading organisation, as well as car manufacturer, Daewoo identified the potential of using cotton as a return cargo. They purchased one of the cotton traders and therefore have potential traffic in each direction. This two-way trade also opens the potential for “swap deals” and other special arrangements. Due to the scale of the Daewoo’s operation and its importance in commercial activities, it would be assumed that they have a special relationship with the Government which cannot be matched by the other cotton traders. The Daewoo is, therefore, a one-off situation and should not be considered representative of the market as a whole.

The original proposals from Daewoo were to develop five consolidation points:

- Bukhara: covering Bukhara, Kagan, Shorifkan, Peshku and Romitan
- Samarkand: at the Ulugbek terminal covering Juma, Metan, Chelek, Uleg Beg and Kota Kugan
- Andijan: covering Andijan, Kurgantube, Asaka, Shakhrikhan, Sufikishlak, Boz, Chinabad, Khodjaabad, Paitug, Akaltyn and Savai
- Urgench: covering the north west
- Termez/Surkhandarya: covering Uzun, Denau, Khairabad, Shurcha, Djarkurgan, Termez and Sherabad



Initial problems tended to relate to the financial, rather than technical aspects. The positioning costs of moving the containers from Asaka to the various loading points was considered too high and made the proposed venture uneconomic. Special rates were offered and the logistical system has since been modified. Their buyers and classers visit the selected ginneries and mark the required bales. These are then loaded into covered rail wagons and moved to Sergeli Station in Tashkent for re-loading into containers.

The existing facility at Sergeli consists of a transit warehouse with rail lines either side. The cargo is discharged from the wagons into the warehouse and across into containers placed on skeletal trailers, which have been backed-up to the other side. A new area has been developed with overhead gantry cranes so that an alternative method can be used. The empty containers are placed on a platform level with the rail wagons. The cargo is transferred into the containers using diesel powered front loaders. They are normally stowed one class per container, but there are also mixed loads which result in slow loading due to extra sortation. There has been congestion problems at Sergeli, especially during the initial stages. The containers are then placed onto 50 tonne 18 metre flatbed wagon 3 containers per wagon. (see photos in Appendix 2)

This operation confirms that there are no technical reasons why Uzbekistan cotton cannot be transported in containers. The stowage factor of Central Asian cotton is better than other sources and currently 63 bales or 13.67 tonnes can be loaded in a 20 ft unit. Since Uzbekistan has in the past sent cotton to Riga and then on-forwarded by the buyers from Riga in containers, it was already known that the cotton could be containerised. However, the Daewoo contract confirms that it can be technically undertaken in Uzbekistan closer to the production source, rather than solely at the FOB port.

## 10.2 Container Availability

A critical issue in the development of containerisation of cotton is the availability of containers in Uzbekistan. Containers are primarily used in connection with a logistics chain which involves use of the maritime mode for part of the journey. The majority of containers are owned by or leased by the shipping companies for use on their own services. The other main container source is the large industrial companies who lease containers for specific contracts, such as Daewoo, and have the containers moving in a "closed circuit" whereby the containers return to the original despatching point.

For containerisation of cotton to be economically viable, there must be a surplus of containers within Uzbekistan, preferable close to the consolidation depots so as to minimising repositioning expenses. The costs of importing empty boxes for an agricultural export movement would be prohibitive. The ideal situation is where the transporter of the inward container is seeking a return load to a market where he can obtain another outward load. In this case, he has repositioning costs which can be recovered by offering marginal cost rates to a potential exporter. Uzbekistan has an imbalanced

trade in containers in that higher value commodities are being imported in containers and there are insufficient return loads as Uzbekistan does not produce added-value export commodities in equivalent quantities. This results in a container surplus in Uzbekistan, as is the case in most other Central Asian states.

It is clear that there is a container surplus, but there are other aspects which should be considered:

- size of the surplus: Is the surplus so large that sufficient containers will be available to accommodate major flows of cotton? Is the surplus so large that special rates can be obtained westbound and without charging of daily leasing costs?
- destination: Is the cotton destined for the countries served by the owner of the container? Can it be routed via that specific sea carrier?
- type of container: Are there enough 40 ft containers for high volume cargoes such as cotton?

The majority of imports into Uzbekistan arrive in rail wagons or by road trucks. As a result, there are concerns that the container surplus may not be as large as suggested by the national trade indicators. It may also not be sufficiently large so as to create a “buyers market” to obtain highly discounted rates eastbound. Initial quotations from commercial operators confirm this situation. There is some evidence to suggest that if major quantities of cotton were containerised that there would be insufficient inward boxes available, given current levels of trade. The Daewoo contract should be considered as a separate operation using their own containers in a “closed circuit” and their units are not expected to be available to other parties for movement of cotton westwards.

The location of the end-users of the cotton are not generally the prime container import sources. This presents problems in that shipping lines who own the containers are unlikely to offer attractive rates except on shipments to specific destination served by them. There is no similar industrial contract to the Daewoo project with inward container shipments from the west. This situation is further expected to limit the container availability. An example of this is Sealand who have a surplus of import boxes in Uzbekistan. They are mainly a trans-Atlantic carrier and can offer attractive rates to the US. However, they are not a CIS/Europe carrier and therefore are unable to offer competitive rates to Europe, which would be a repositioning “triangular” journey.

The dominant inward container in Uzbekistan is the 20ft unit. The percentage of 40 ft units is relatively low. Much more attractive unit rates can be obtained for the larger boxes, as shown in Table 11. If significant quantities of cotton are to be containerised, it will be necessary to base costings on the use of the standard 20 ft unit. However, the Consultants have assessed the pricing differentials if 40 ft units were available in Table 14:

Table 14 - Logistical Costs for Conventional and Containerised Cotton Movements  
(Costs per tonne)

<i>Route</i>	<i>Conventional</i>	<i>20ft Units</i>	<i>40ft Units</i>	<i>Containerisation premium using 40ft units</i>
Via Poti	171.94	282.99	244.10	72.16
Via Riga	223.54	275.59	253.33	29.79
Via Brest	224.19	275.59	253.59	29.40
Via Chop	231.01	290.40	271.88	40.87

It can be seen that this reduces the differential significantly. However, it is probably still insufficient as to make containerisation viable with current tariffs. In practical terms, the exclusive use of 40 ft units is not possible given the size of the flat wagons with an optimum 3x20ft or 1x20ft and 1x40ft combinations. Thus the full savings would not be possible, even if there were sufficient 40ft containers available in Uzbekistan.

It is recommended that an inventory is made by the Commission of the average container "pool" in Uzbekistan. This will identify the theoretical resources available for use in promoting the containerisation of cotton. This should include details of carrier ownership and the potential markets to which the unit could be returned, as well as the configuration of container types.

### 10.3 Handling in Uzbekistan

The current procedures for handling containers is explained in the previous section. In Section 9 the costs relating to the loading of cotton in containers were as follows:

- delivery by road to consolidation point and loaded into containers - \$ 18.17 per tonne
- delivery by rail to consolidation point and loaded into containers - \$ 14.23 per tonne
- take the container by road to the ginnery to load - \$15.63 per tonne
- take the container by rail to the ginnery to load - \$ 9.73 per tonne

Although the last option is the most economical, it is technically the most difficult. This is because the containers are standard end-loading boxes, as opposed to covered wagons which are side loading. The existing platforms at the ginneries are therefore unsuitable for loading of containers.

The method used in Europe for such situations is to pave the rail line area so that a fork truck can cross the lines and work direct from the ground into the door openings. The boxes have to be stowed on the rail wagons with doors opening out onto the ends of the wagon and the wagon has to be handled individually.

It is not considered that this method is realistic in Uzbekistan for the following reasons:

- the costs of redeveloping the sidings at the ginneries
- the requirement for shunting equipment to handle wagons as single units
- the system is only suitable for two containers per wagon, whereas Uzbekistan mainly uses 18-19 metre flatbed wagons with three units per wagon
- the difficulty of using lifting equipment inside the confined space in a container with bales of over 200 kilos

The current Daewoo system with consolidation at specific centres would appear the most practical, and in most cases economical. The increased use of containerisation could slightly increase the internal transport costs in Uzbekistan as it will gradually involve an increase in the average transit distances from the ginneries to the consolidation depots. However, this is unlikely to exceed \$2.00 per tonne.

In overall cost terms, the internal costs in Uzbekistan still represent under 10% of the total door-to-door costs. Any reduction would be considered beneficial, but are unlikely to be of sufficient magnitude to make containerisation a more attractive proposition in economic terms. The Consultants consider that the internal costs of moving the cotton from the ginneries to the borders in containers is unlikely to be less than \$20 per tonne or \$270 per container as opposed to \$12-15 per tonne for conventional shipments but that this differential is not critical to the growth of containerisation.

#### **10.4 Transport Rates from Uzbekistan**

Section 9.3 highlighted the cost differential on conventional and containerised shipments from the consolidation centre to the FOB ports or FOR borders. It identifies four problem areas:

- transport economies of scale - 51.6 tonnes in 14 metres of wagon as opposed to only 40.5 tonnes in containers in 19 metres of rail wagon
- the use of different tariff systems
- cotton is volumetric cargo and therefore the weight per container or 6 metres of wagon is low which has disadvantages when tariffs are based on weight
- costing are based on individual container loads without quantity discounting for large volumes such as those currently available for conventional cotton movement

Chapter 9 identified that the current container tariff is too high to promote the use of containers on any of the routes. The income per wagon under the different tariffs are shown in Table 15 as follows:

Table 15: Income per 14 metre of Wagon ex Tashkent - Selected Routes

<i>Route</i>	<i>Price per covered wagon (14 metre) - MTT</i>	<i>Price per container wagon (14 metres) MTT</i>	<i>Price per covered wagon (14 metres) Uzyneshtans *</i>
Tashkent - Poti	\$3150	\$4100	\$2732 (est)
Tashkent - Riga	\$3800	\$4000	\$3828 (est)
Tashkent - Brest	\$3500	\$4000	\$4347 (est.)

\*includes domestic transport costs

This table shows that apart from the special rates to Poti that the income per wagon is not significantly different to the ports. The problem occurs when the unit costs are calculated because of the difference in carrying capacity - 51.6 versus 27 tonnes in 14 metres of wagon length. It is evident that special rail rates for containers will be needed to make containerisation competitive with conventional mode.

It is recognised that there are problems in agreeing rate reductions. This is because the route passes through various sectors in other countries and the charging systems tends to be an addition of these various sector charges, rather than an integrated terminal to terminal rate which is then split proportionately. To make containers comparable to conventional in unit tonnage rate terms would require the following rates per 20 ft unit:

- Tashkent - Poti: \$ 541 per box or \$1084 per wagon
- Tashkent - Riga \$1165 per box or \$ 2330 per wagon
- Tashkent - Brest \$1300 per box or \$ 2600 per wagon

These calculations clearly indicate the difficulties in making reductions to levels which are comparable to the existing conventional methodology. Since the transit is through a number of countries, the potential for substantial reductions appears limited. The question of what would be an acceptable rate would probably revolve around who is paying for the movement.

Under the present selling system, the seller could subsidise the rates with a partial recovery from the buyer for the reduced FOB charges. However, this would, in effect, reduce the income generated

from the cotton sale. If the terms of sale were altered to ex-consolidation centre, this movement would become the responsibility of the buyer. It is unlikely that he could obtain as attractive rates as those that can be negotiated by Uzvneshtrans or through the Governmental purchasing system. It may be that an arrangement whereby the seller actually is responsible for the delivery to the FOB port but the charges are recovered from the buyer for this activity may be more acceptable. This is not an unusual procedure for door-to-door container shipments where the terms of sale are other than ex-works or free-delivered.

It is clear that the major cost problems relating to the movement of cotton in containers is that the Government obtains special transport rates for the movement of cotton which is a strategic export cargo. These rates at \$0.017-0.020 tonnes per kilometre are probably at cost (based on TRACECA rail studies). In the case of TRACECA, it is probably at subsidised rates, given the additional costs of the Caspian crossing. Comparisons in Section 9 are therefore between an at-cost or subsidised rate for conventional shipments against a full commercial rate for container shipments. This situation tends to magnify the cost differences.

The consultants have undertaken an evaluation of potential reductions in the rail tariff which could allow the movement of some cotton in containers. This is based on the principle of market pricing. If it was assumed that the Government were negotiating the rate and recovering from the buyer, it is unlikely that they would wish to exceeding the following rates:

- Tashkent/Bukhara - Poti: \$1000 per 20 ft unit - \$74 per tonne - \$0.032 per tonne km
- Tashkent/Bukhara - Riga: \$1500 per 20 ft unit - \$111 per tonne - \$0.026 per tonne km
- Tashkent/Bukhara - Brest: \$1800 per 20 ft unit - \$133 per tonne - \$0.032 per tonne km

This would mean the following increase in costs per tonne for the buyer:

- to Poti: \$ 22.49 per tonne
- to Riga: \$ 7.93 per tonne
- to Brest: \$ 29.50 per tonne

and the following loss of revenue per 14 metre wagon to the rail system compared to a standard covered wagon:

- to Poti: \$732 per wagon or 27%
- to Riga \$828 per wagon or 22%
- to Brest \$747 per wagon or 17%

These figures demonstrate the difficulty in reducing rates to the required levels to match current conventional systems. The cost of the Trans Caspian ferry has recently been increased from \$23 per

metre to \$30. This equates to \$8.37 per tonne conventional wagons and \$14.07 per tonne in containers.

A re-evaluation of the container rates has been undertaken with Shoshtrans to examine the potential to obtain more attractive rates on the Bukhara -Poti journey than those published in the TRACECA Multi-Modal Report and which were shown in Table 11. These new costs indications are shown in Table 16:

Table 16 - Transport Rates from Buchara - Poti

<i>Movement</i>	<i>20ft Container</i>	<i>40ft Container</i>
Uzbekistan 111kms	\$ 82	\$ 148
Turkmenistan 1163 kms	\$ 518	\$ 932
Azerbaijan 502 kms	\$ 256	\$ 461
Georgia 360 kms	\$ 257	\$ 463
Trans Caspian (est)	\$ 198	\$ 396
<b>Total</b>	<b>\$1311</b>	<b>\$2400</b>

The costs in Table 16 equate to \$97 per tonne in a 20 ft unit and \$89 per tonne in a 20 ft unit. These exclude trade facilitation charges such as documentation, Customs clearance etc. Whilst these charges are still significantly above the costs per tonne of conventional cotton shipments, it clearly indicates that there is scope for the negotiation of special rates which would make containerisation more attractive.

The market pricing calculations suggest that Riga could be the optimum routing to experiment with containers because:

- the potential to offer special container rates is greatest on that route as the current cost differentials between the two systems are smaller
- it is a major container port with appropriate world-wide service levels
- it is an all-rail link suitable for block trains. On TRACECA, the train needs to be split at certain points and later re-formed
- rates across the Caspian Sea will be in length metres and will therefore always act as a disincentive to volumetric loads

- the Riga route is seen as more reliable by buyers when considering JIT distribution systems

Poti already has attractive transport rates for conventional rail traffic which will be difficult to match with unit container charges. This would indicate that the primary role of Poti would be in handling bulk shipments, as at present, where there are significant cost advantages. It is recognised that secondary distribution in containers from Poti is currently a major problem both in terms of service level and cost. There are few services and current quotes exceed the \$100-\$120 per tonne allowed for by the buyers for secondary distribution. It is known that there are proposals to evaluate a through service to Europe for containers and possibly rail wagons and this buyer pricing allowance should be used when considering the cotton traffics.

The market research in Part 1 indicated that the percentage of cotton which was already on-sold to the end-user prior to despatch from Uzbekistan was relatively small, under 20%, and in relatively small lots per customer. This situation precludes the use of container block trains, which might have provided the economies of scale to consider significant reductions in rail charges. It will be important to monitor developments in the market such that if this percentage increased, lower rail rates might be possible thus attracting the use of multi-modal transport.

An outline appraisal has been made of some selected secondary distribution destinations to check that the \$100-\$120 allowed by the buyers is realistic:

Riga - Rotterdam	\$ 1160 = \$ 86.93 per tonne
Brest - Paris	\$ 820 = \$ 60.74 per tonne
Chop - Milan	\$ 490 = \$ 36.30 per tonne
Poti - Marseilles	\$1200 = \$ 88.89 per tonne
Poti - Livorno	\$2800 = \$207.00 per tonne

Allowing for a 50 -70% addition for trade facilitation and final delivery to the end-user, these rates except for Poti/Livorno, indicate that secondary distribution can be achieved by container within the \$100-\$120 budget. Since the secondary distribution from Riga is normally in containers, it was assumed that containerisation cost would be within the budgets. In the case of the land borders, the costs are well within the budget and therefore would allow for some of the extra costs in transportation to those borders. However, it is still assumed that the unit costs using a conventional covered wagon would still undercut the container rate. In the case of Poti, the container costs are high but are dependent on destination. In all cases, the costs are lower using conventional movement in wagon to the FOB or FOR point and then containerising are lower in unit costs than a through container movement direct from Uzbekistan. This situation was confirmed in quotations received from Uzbekjeldorexpediticya.



## 10.5 Changes in Selling Terms

Following the publication of Part 1, it is generally agreed that the use of the current selling terms act as a deterrent to containerisation. The initial impression was that there was no specific pressure from either the buyers or the sellers for changes to the current system. It is recognised that there is a desire in Uzbekistan to consider changes, which would either generate additional income to the sellers or promote containerisation.

As indicated in Part 1, cotton is an internationally traded commodity. This report is concerned with logistics, rather than cotton trading. Any changes will be the result of specific negotiations between the sellers and buyers, each with their own strengths and weaknesses. In this section, the logistical implications of potential changes are examined in respect of their risks to containerisation. This is particularly relevant in terms of EU investment in consolidation centres if they are reliant on containerisation to justify such investment.

The proposals are that cotton is sold on different terms:

- ex-Consolidation Depot, in effect “ex-works”
- DAF Delivered at Frontier, as per Daewoo

Both systems are designed to obtain the revenue at an early stage, improve cash flow, and transfer the responsibility and costs outside Uzbekistan to the buyer with consequent savings in transport and storage costs.

Part 1 indicated that buyer did not wish to undertake the primary distribution and saw this as the seller’s role. This was principally because they considered the primary logistics as an area of risk. They also preferred to take delivery of the cargo at a point in a neutral country with immediate access to secondary distribution resources. It was indicated that in the international cotton market, there have been instances of overselling and seizure of sold cotton when retained in the warehouses in the producer country.

The benefits of a new systems are clearly evident to the sellers, but less clear to the buyer. His principle logistical concerns are expected to be:

- distribution
- storage

Under the proposals, the buyer would be expected to take delivery ex-the consolidation depot. The current system is that Uzneshtrans are responsible for the primary distribution and the buyer appoints his own forwarder for the secondary distribution. In Uzbekistan, there are no registered

foreign forwarders. This would mean that either Uzvneshtrans or another state forwarding company would have to be appointed or foreign forwarders allowed to operate within Uzbekistan. Buyers may be apprehensive regarding the use of state forwarding companies, particularly if a monopoly exists. These companies are not considered by the buyers to have the appropriate international experience, particularly to undertake secondary distribution of door-to-door movements.

A major area of concern is that once the cotton is sold, it becomes the responsibility of the buyer to move it along the transport corridors. In effect, it becomes a standard commercial shipment without special rates or quantity discounts available to the state organisations. This not only relates to rail charges but is a specific problem in relation to Customs and documentation. Certain railways and Customs require separate documentation for each wagon or consignment and charge accordingly. There will be a substantial increase in trade facilitation costs compared to the current system where the traffic is a single point-to-point cargo from a state organisation to the same organisation at the destination. The current movements of cotton along the TRACECA route are covered by the inter-governmental "Sarakhs Agreement" but would cease to be included if the point of sale were to change.

The responsibility for damage in transit will become the buyers responsibility. If the cargo is in covered wagons this will be a major concern for the buyer as he will have to stand the losses. It is difficult to obtain insurance because in practical terms the railways have no liability for damage, though theoretically they have some responsibilities under the conditions of carriage. It is assumed that this would be less of a problem with container shipments, provided there was independent loading control.

If the new trading terms were accepted, it is assumed that buyers would probably seek to increase stock levels in Uzbekistan. This is because they would not wish to pay the primary distribution expenses until the last moment. Provided that the buyers could be satisfied that they have "Deed of Title" under international law to those goods, this policy would have positive benefits to the Government in savings in external storage charges. It is important to confirm that there is sufficient quality warehousing in Uzbekistan to cope with stock storage closer to the point of production. There is evidence to indicate that there would be a shortage if the changes in selling policy resulted in increased domestic storage requirements.

A more serious risk is that the buyers may gradually transfer over to Just-in-Time distribution using containers direct from Uzbekistan to the end-user. This is one of the perceived benefits of containerisation. However, this can also mean JIT purchasing with increase "purchaser power". There is an increased risk that the purchasing will only be made against confirmed orders. This would have major implications on the cash flow, both for the seller and particularly the individual ginneries. It is important that the fiscal implications involved in containerised "ex-works" selling is fully appreciated.

The general trend in containerisation has been towards CIF or Free Delivered rather than “ex-works”. It is recognised that this is difficult in the case of cotton where the cotton merchant is an intermediary and the end user is not known at the time of sale. This is a reason for the FOB or FOR border terms whereby the seller is responsible for as much of the distribution as possible, thereby obtaining a higher price. The change to “ex-works” would be expected to affect the price paid by the buyers as his costs will increase proportionately.

It should be noted that the changes in selling terms could theoretically take place regardless of whether containerisation was introduced or not. Buyers could purchase “ex-works” in covered rail wagons at the ginneries or consolidation points or FOR the Uzbek border. It is also possible to transport goods door-to-door in containers under any of the selling terms. Containerisation and new selling terms are not dependent on each other. What is more critical is that the end-user is known so the primary and secondary distribution can be combined into a single integrated logistic activity, thus saving costs. However, the use of different selling terms can promote the growth of door-to-door container movements because the end-user is known when the transport commences.

Suggestions have been made that either the seller could sell direct to the end-user, thus enabling a door-to-door movement to take place, or for the seller to hold stock close to the end-user for JIT supply. It is considered that these could be a high risk strategies which could alienate the buyers. Stocks have been held by the Central Asian buyers in Europe previously with a high financial penalty. It is critical that there is a complete understanding of the nature of the commodity market prior to considering “downstream” diversification into direct trading.

## 10.6 Overall Conclusions on Containerisation of Cotton

The overall conclusions with regard to containerisation of Uzbekistan cotton are as follows:

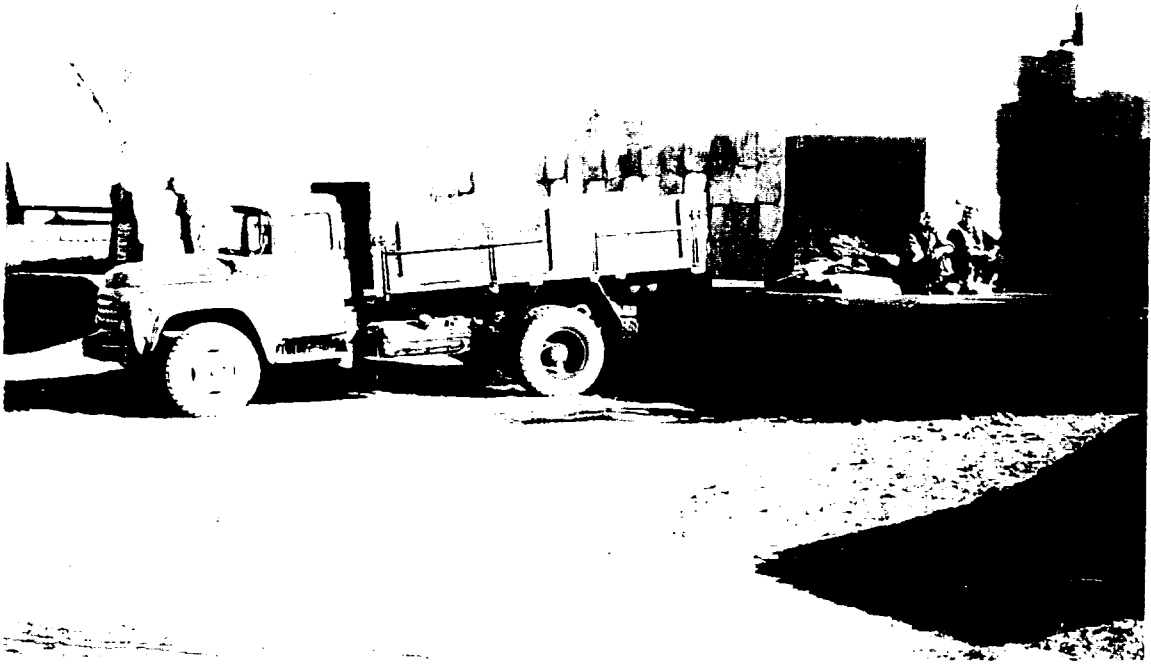
- it is technically possible to containerise cotton in Uzbekistan to enable to development of door-to-door movement of cotton from the point of origin to the end-user
- it will be necessary to develop a limit number of specialised Consolidation Centres with specialised container handling facilities if containerisation is to increase
- the collection of cotton should be mainly in standard covered wagons from the ginneries with the repackaging into containers being undertaken at the Consolidation Centres
- the domestic handling costs within Uzbekistan will be higher per tonne for containerised cotton than for conventional rail shipments, but this is probably not critical
- the rail tariffs for the carriage of containers are currently too high, when compared to the unit costs of a conventional cotton movement in covered wagons, which is being moved at cost or subsidised rates. Correspondingly beneficial rates are required to make containerisation a viable option.

- in the initial stages, there will be insufficient traffic for block container trains where a major rate reduction could be justified but volumes are expected to increase
- the savings of combining of the primary and secondary distribution into a single through movement are not currently sufficient to make containerisation more attractive. It is more cost effective in terms of costs per tonne to use conventional systems for primary distribution and containers for secondary distribution than containers door-to-door with existing tariffs
- the potential to adjust transportation costs to promote containerisation appear better through Riga than Poti. TRACECA is particularly well-suited to bulk conventional traffic with the current rail tariffs. Development of through container services from Poti could make it more attractive as a potential container corridor
- there may be presently be insufficient numbers of empty containers, particularly 40 ft units, within Uzbekistan to handle significant quantities of container traffic
- it is not essential to introduce new selling terms in order to containerise. However, changes could increase the proportion of door-to-door movements to the end user. This has risks associated with increased storage requirements and delayed payments.
- containerisation is normally used in connection with a maritime movement. There is already a surplus of road transport in Uzbekistan for door-to-door land movements.
- containerisation is not expected to achieve significant penetration of the cotton market in the short term. Its longer term use will be determined by more favourable transport economics. Development of door-to-door services by carriers or via the planned through services to Europe across the Black Sea could affect the current economics and make containerisation more attractive.

# *Appendix*

# *1*

## *Photographic Record of Conventional Logistics*



December 1996 - Tashkent Station, Kazakhstan

5000 bags of cement & load here sent to rail

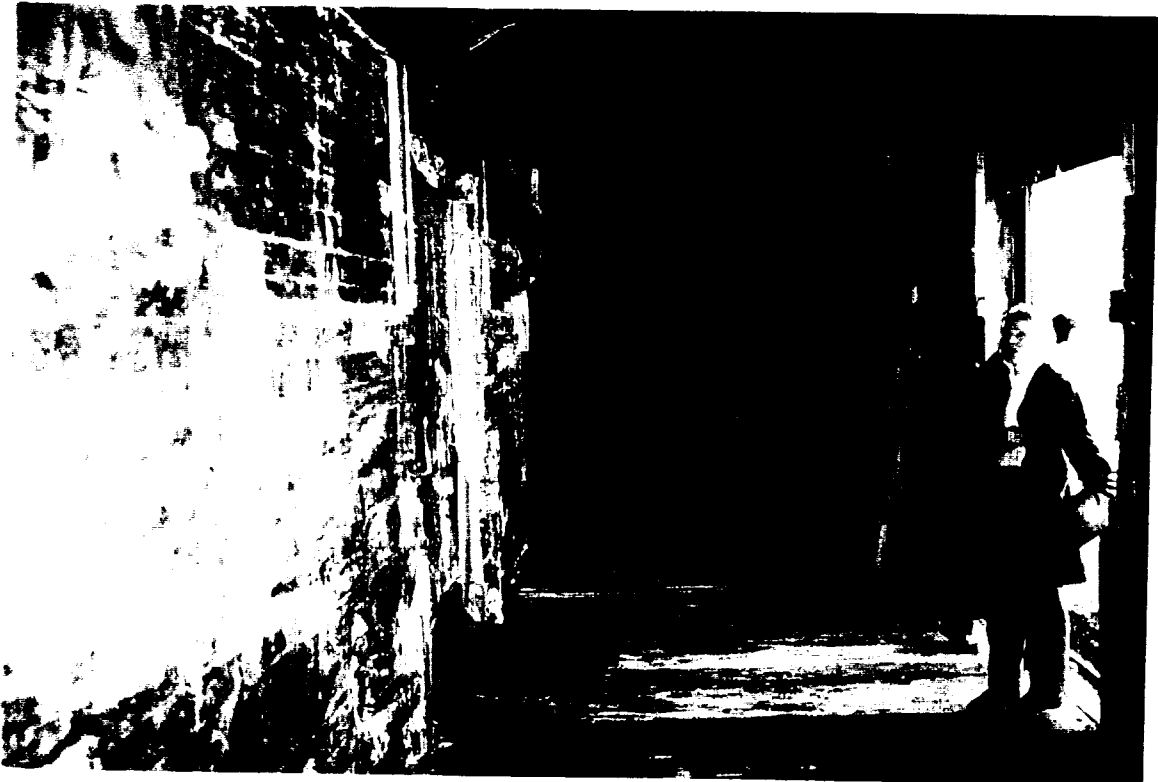
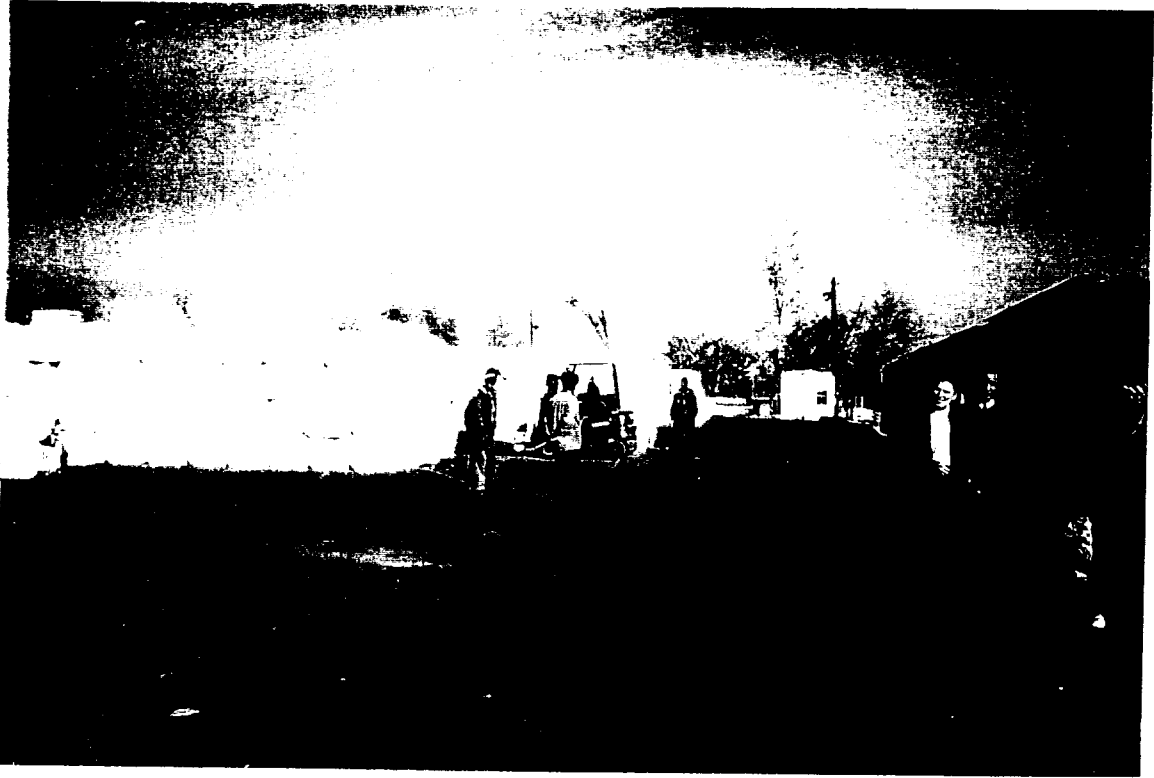




Some covered storage



Forklifts load quickly but many out of service waiting for spare parts



Rail wagons sealed using Kraft paper & glue to prevent water ingress

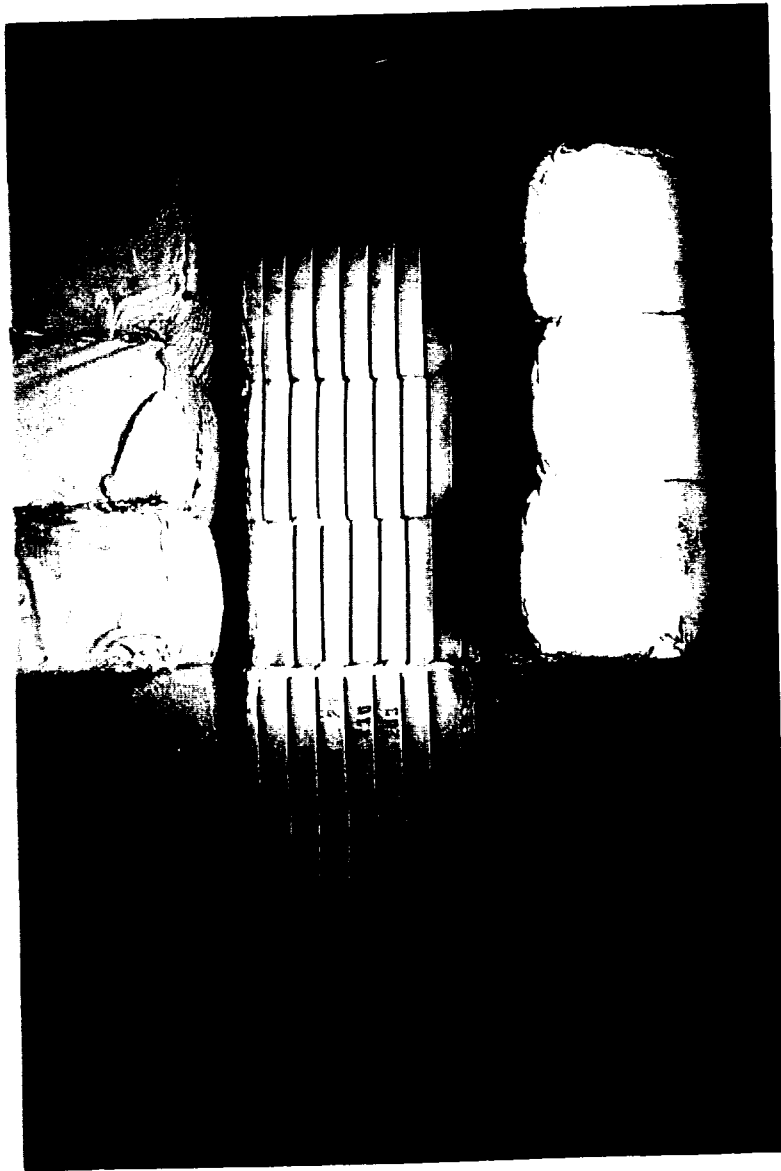




Roof vents sealed



Side vents sealed



Latest crop

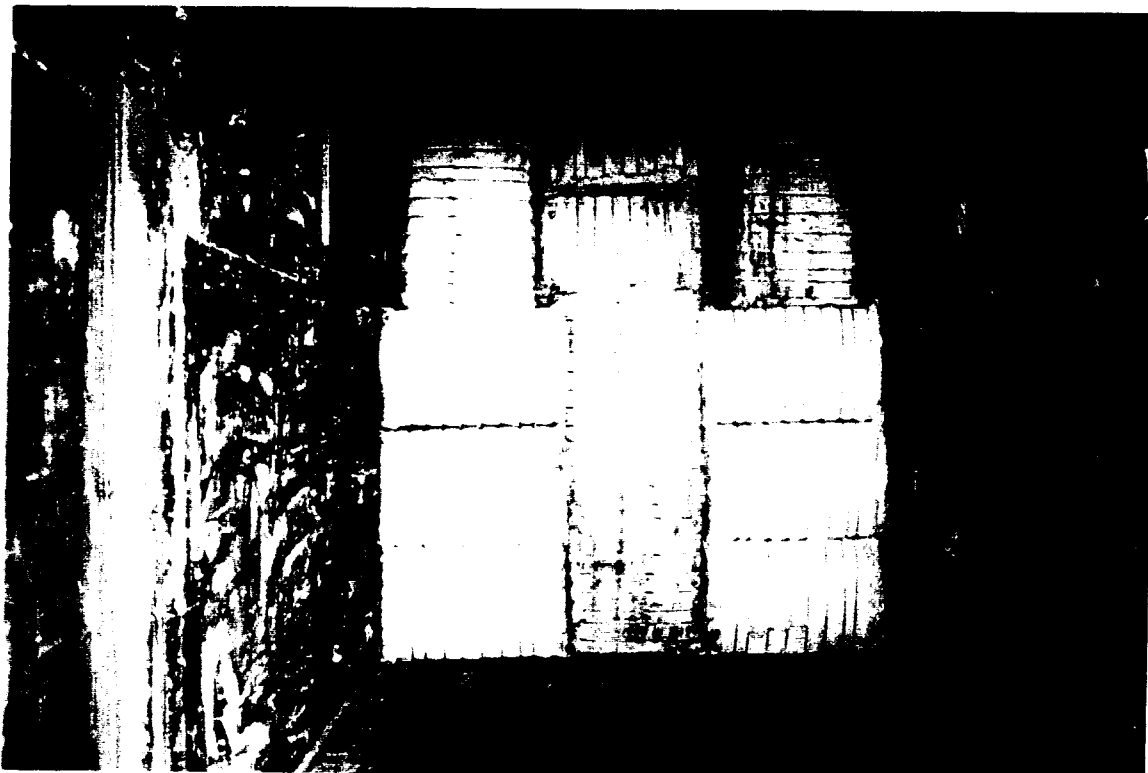
*White stone*



This year's cotton but external very dirty



A sealed door



Good stacking can achieve 52 Tonne

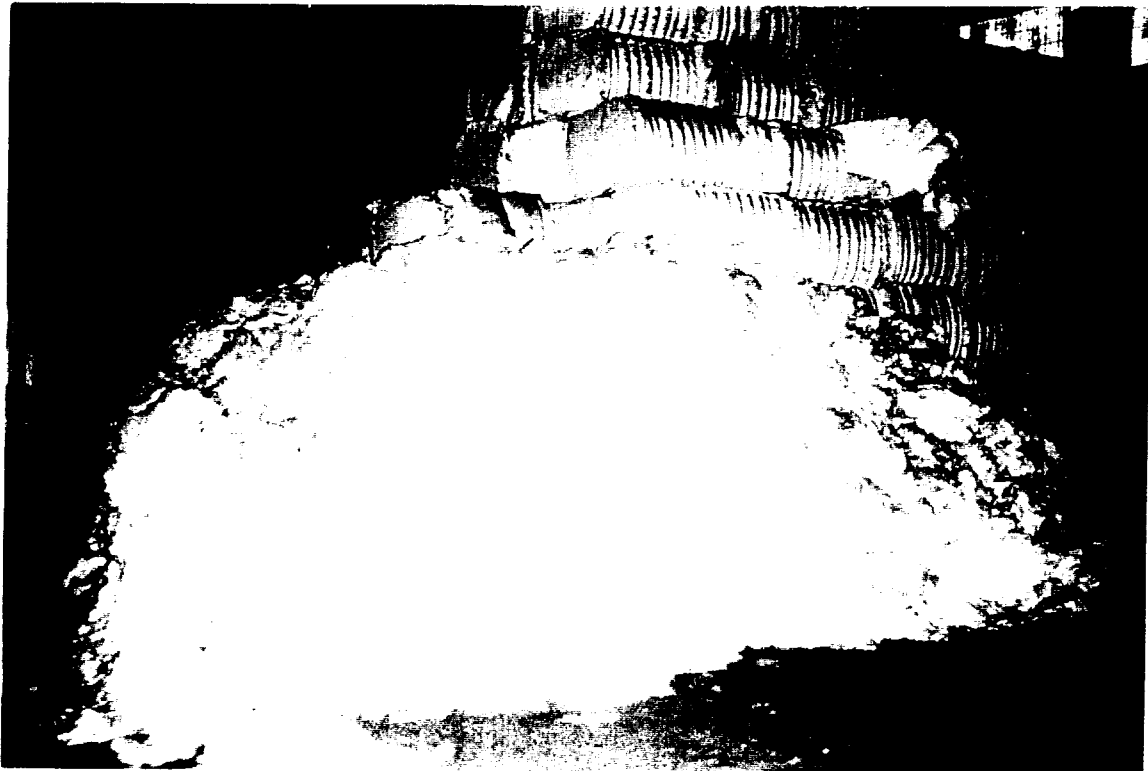


A mix of this year and last year's crop

Damaged not loaded



Representatives of the buyers select bales from these piles



Poti warehouse

Damage in store said to have come out of the wagons

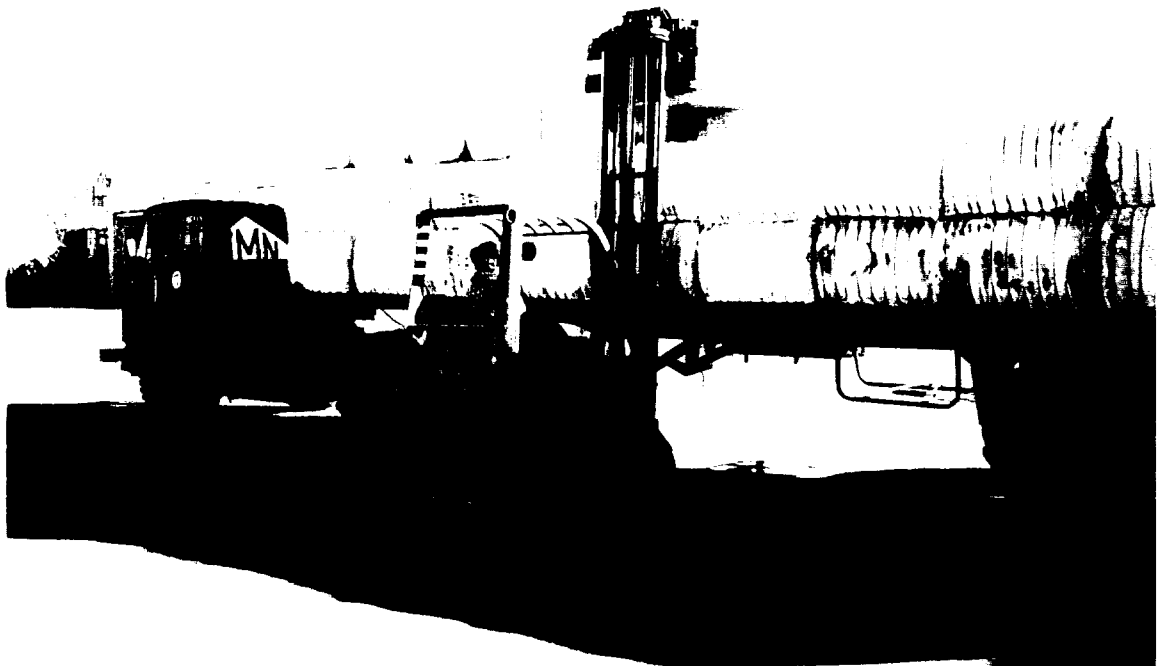


Burst bales





Selected bales being loaded

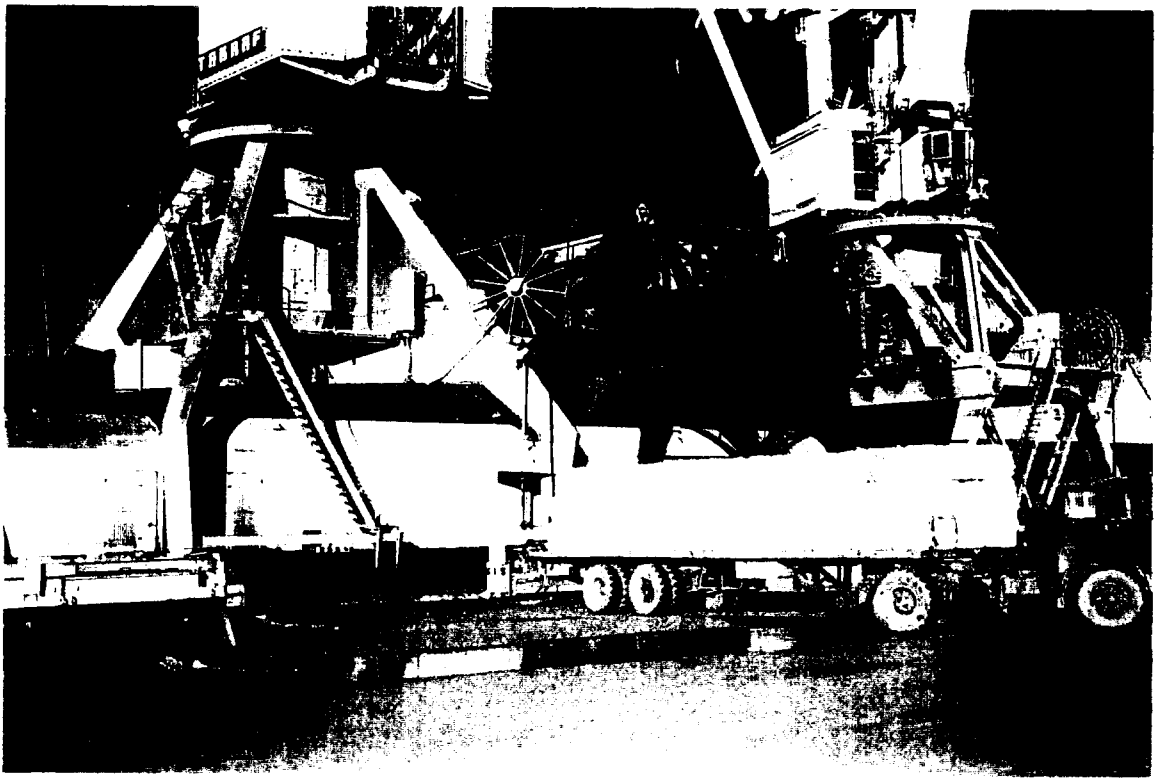


Side loading

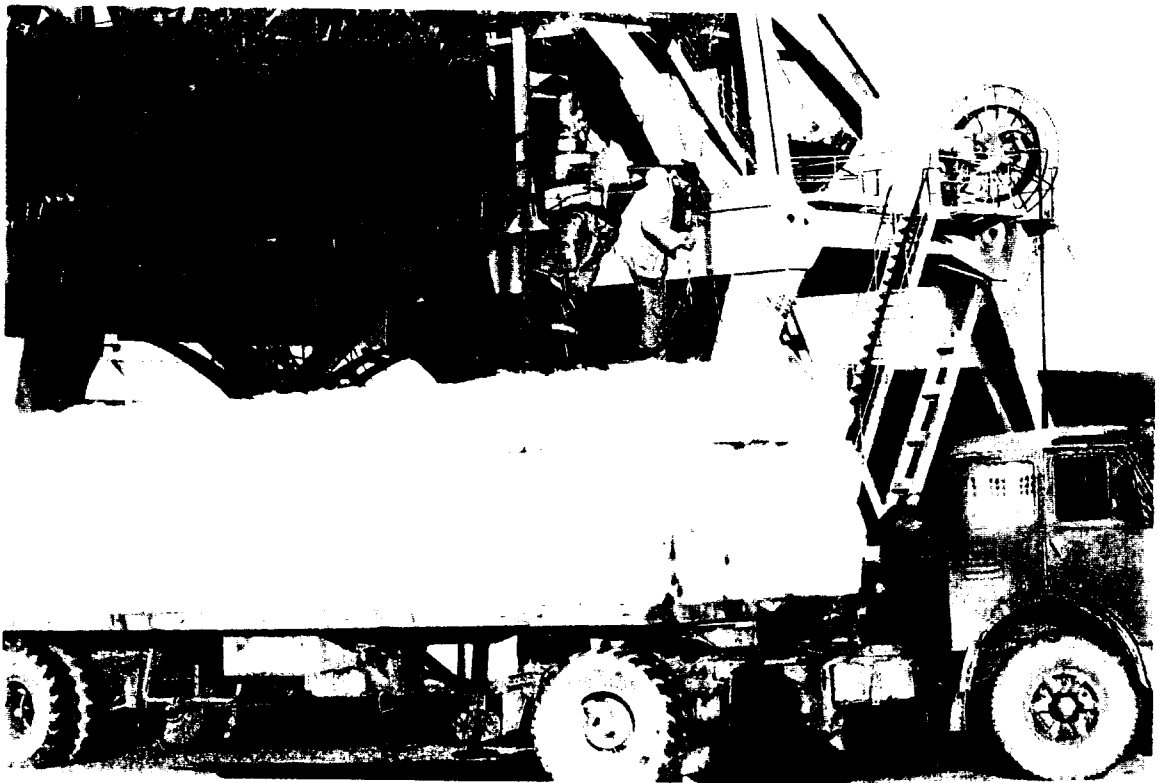




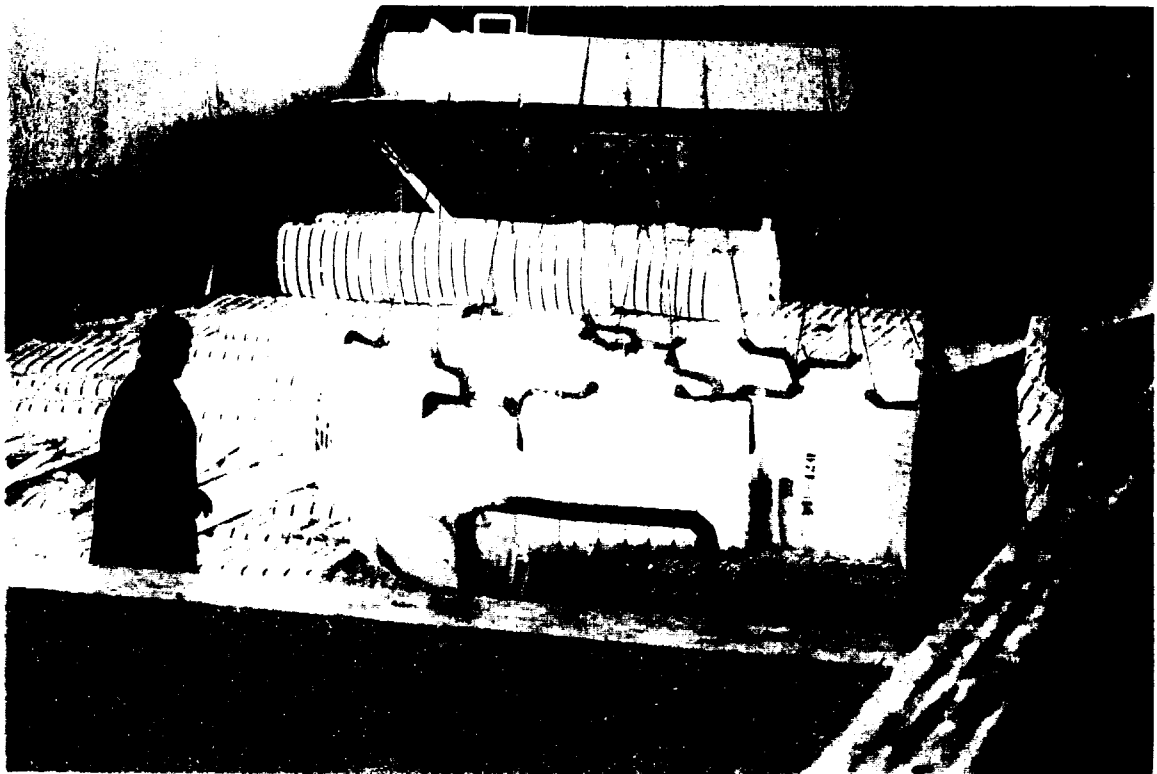
End loading



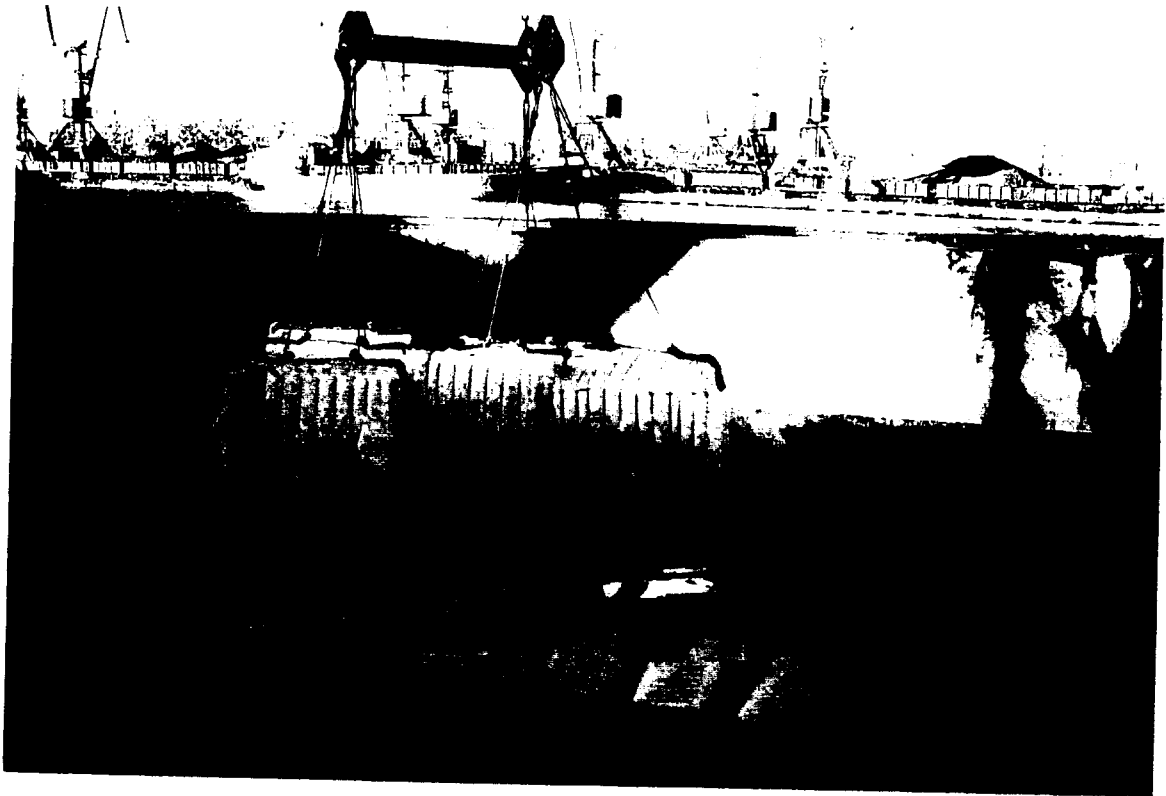
Poti - To dockside 4 km from store



Grapples used to pick 6 bales at a time



Poti - Loading onto 1800 Tonne bulk ship 60 bales at a time



Then moved 4 to new location on ship

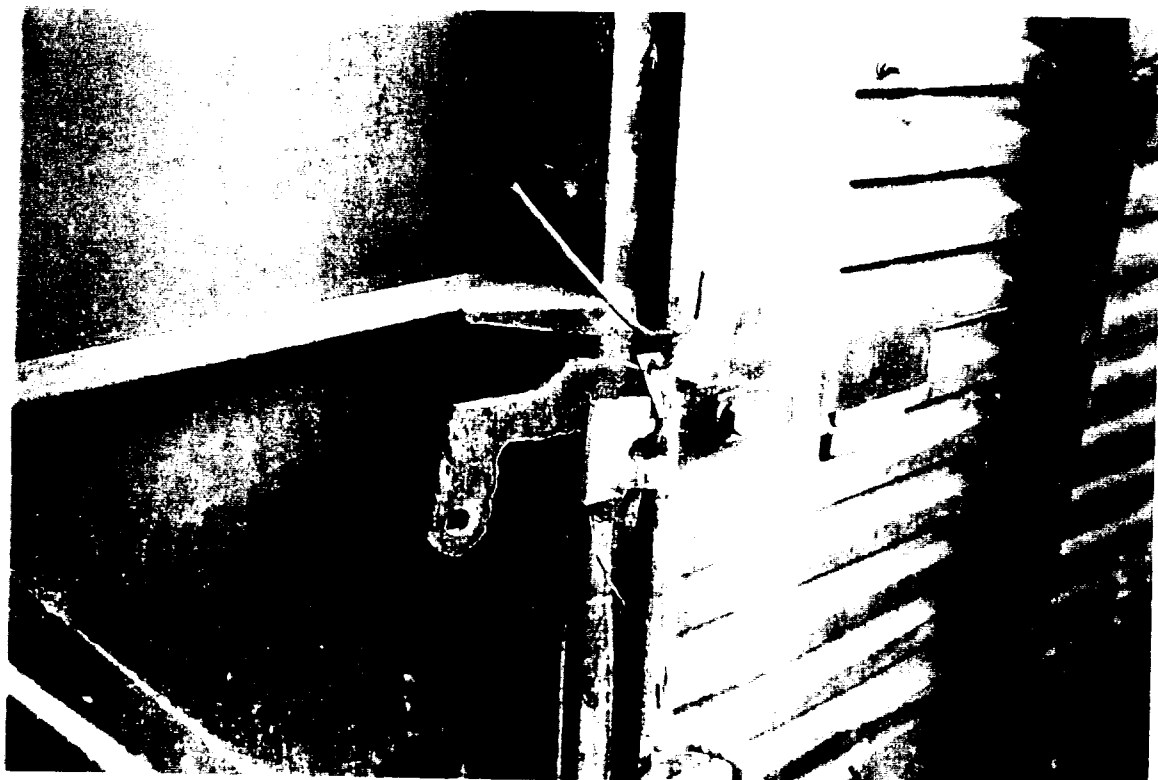


Note wood dunnage



Wagons arrive and are offloaded

After seal is checked

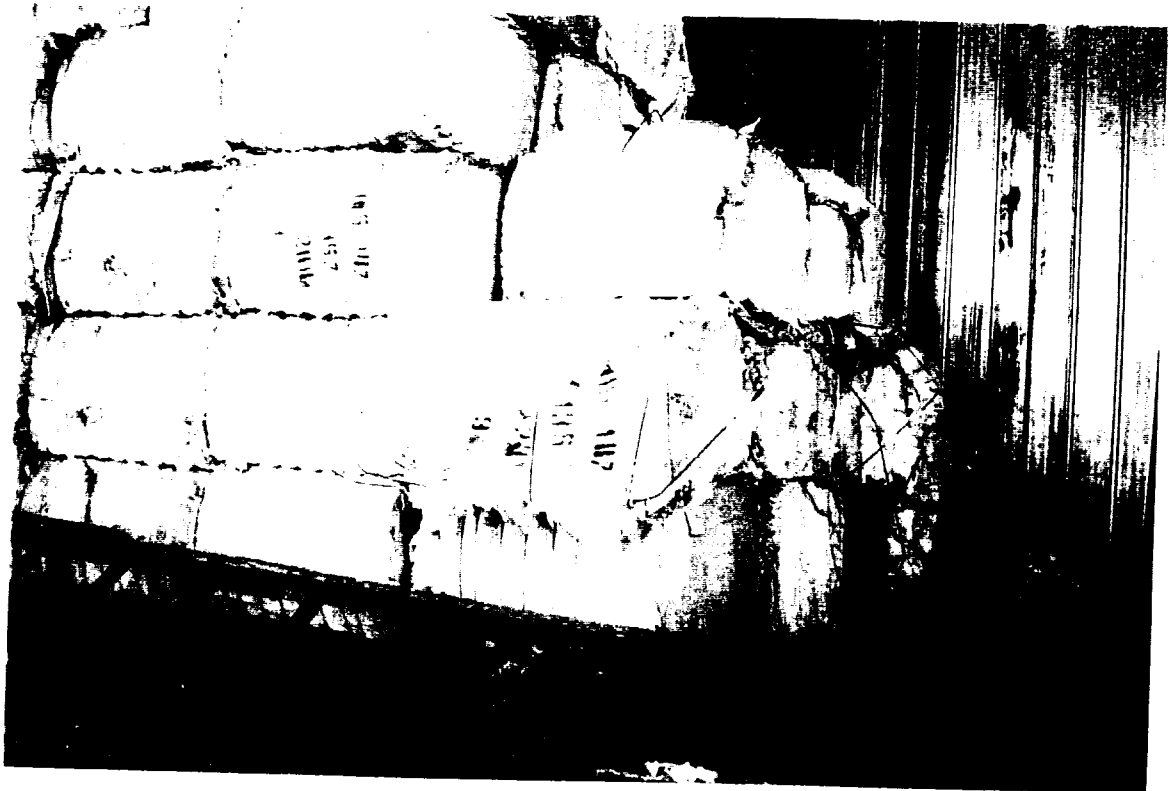




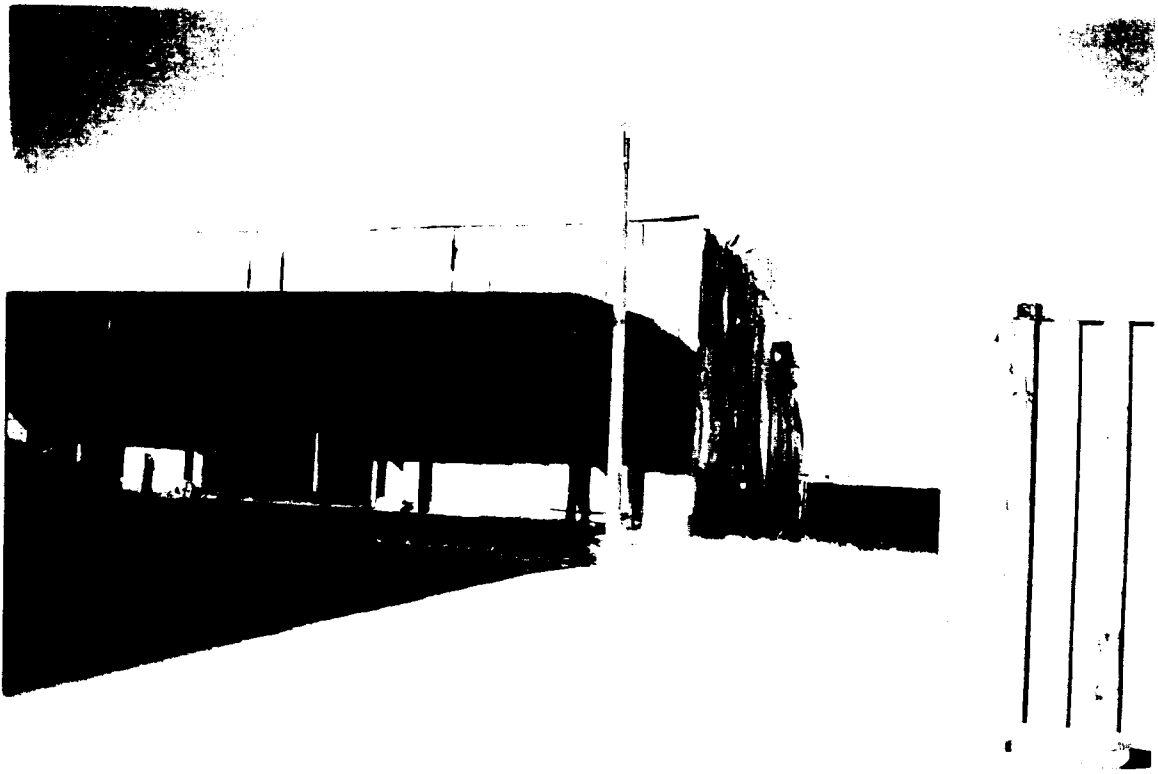
Poti - Tea warehouse just outside the port  
10,000 from storage in 4 sheds



Cotton under the eaves of warehouses



Last year's crop  
Wire bands do not hold well



Poti 56 tonne of damaged cotton caught fire October 1996





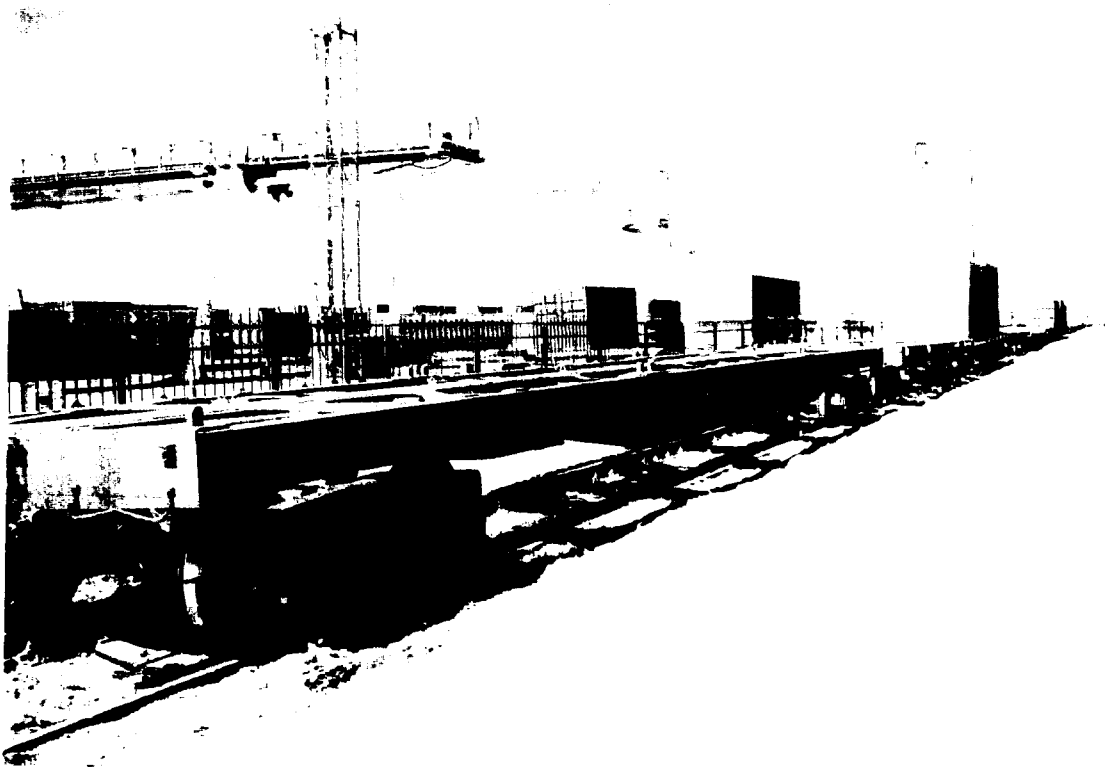
# *Appendix*

# 2

## *Photographic Record of Container Logistics in Uzbekistan*



Shoshtrans. Tashkent Shumilovo Station. Modern "heavy" front loader for containers



Container rail flats



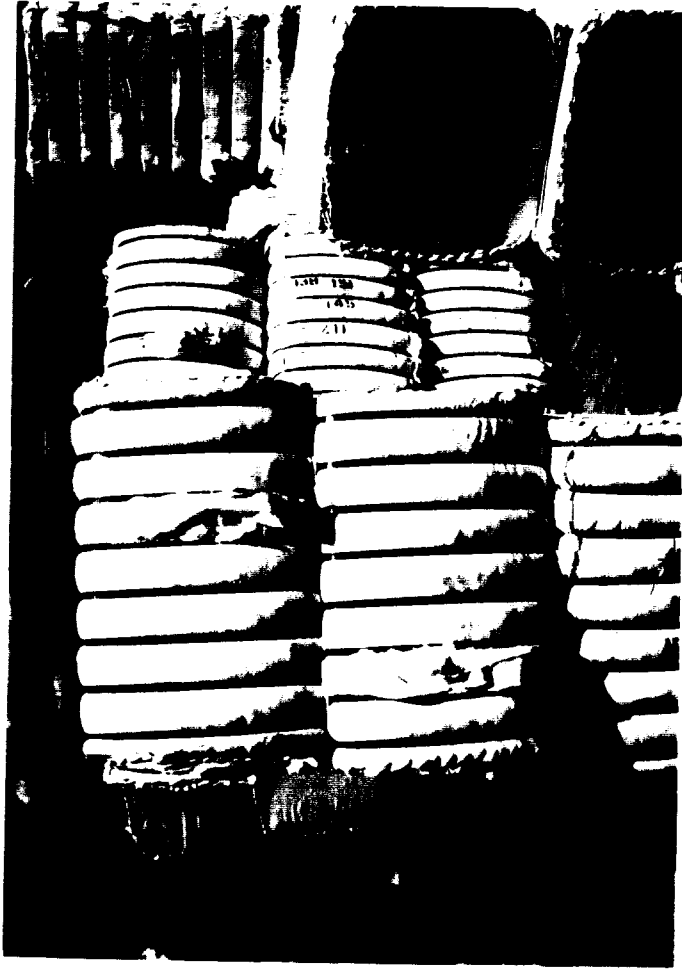
Semi-trailers waiting to be deployed in moving containers by road to the railways



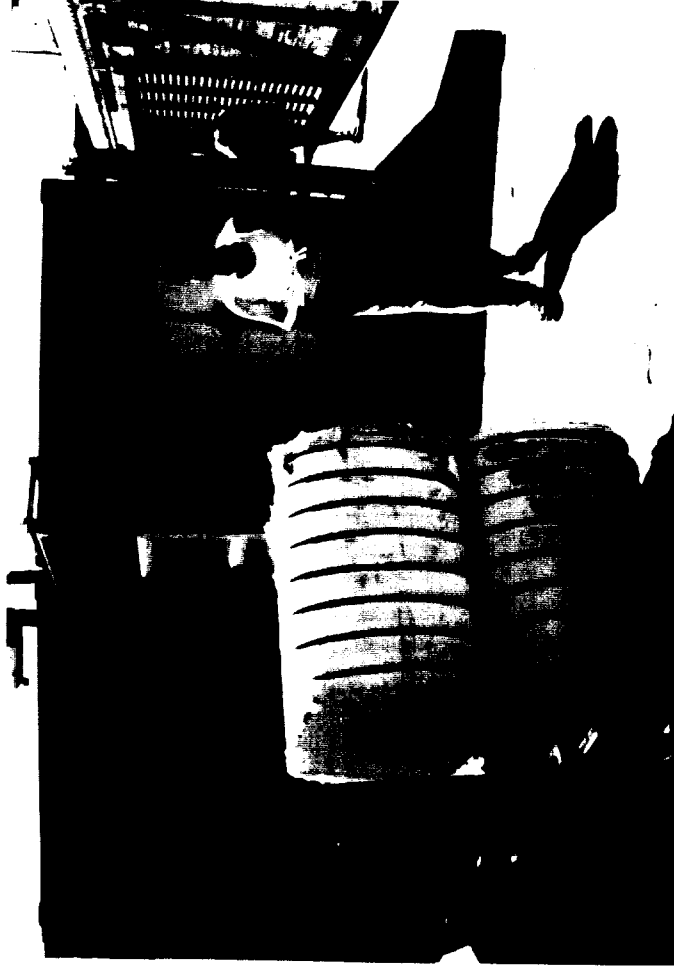
10 new stacker trucks at Shoshtrans for loading cotton bales into containers



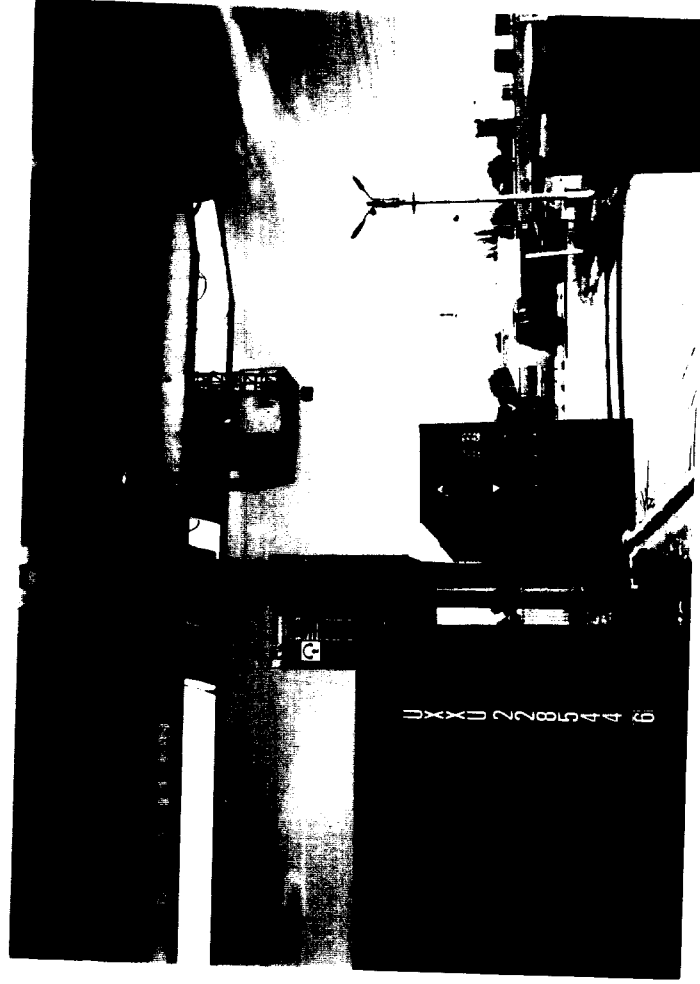
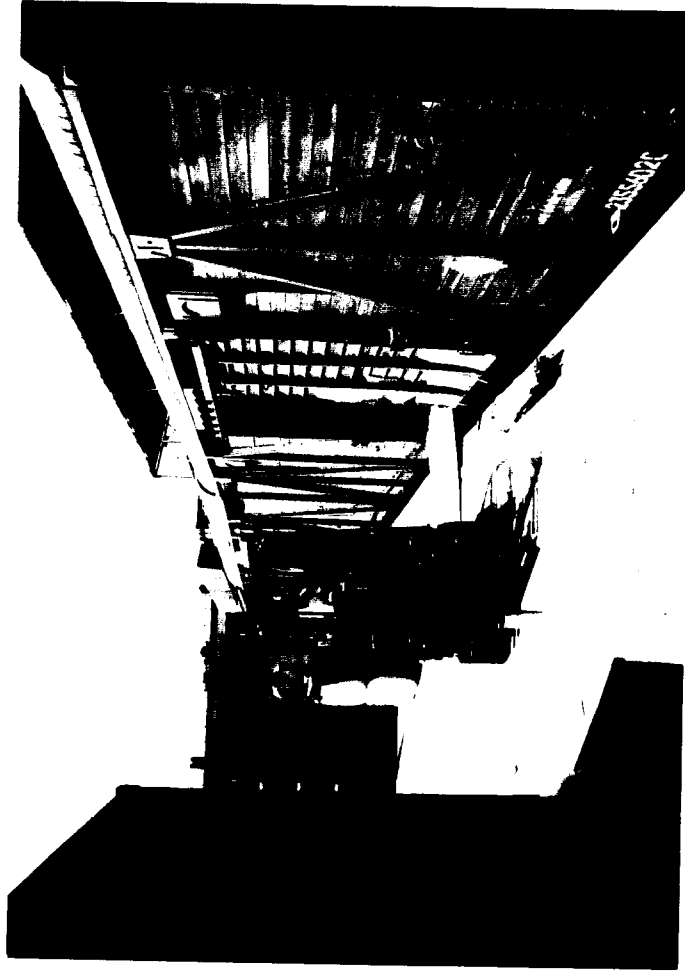
Reefer containers for meat and frozen foods



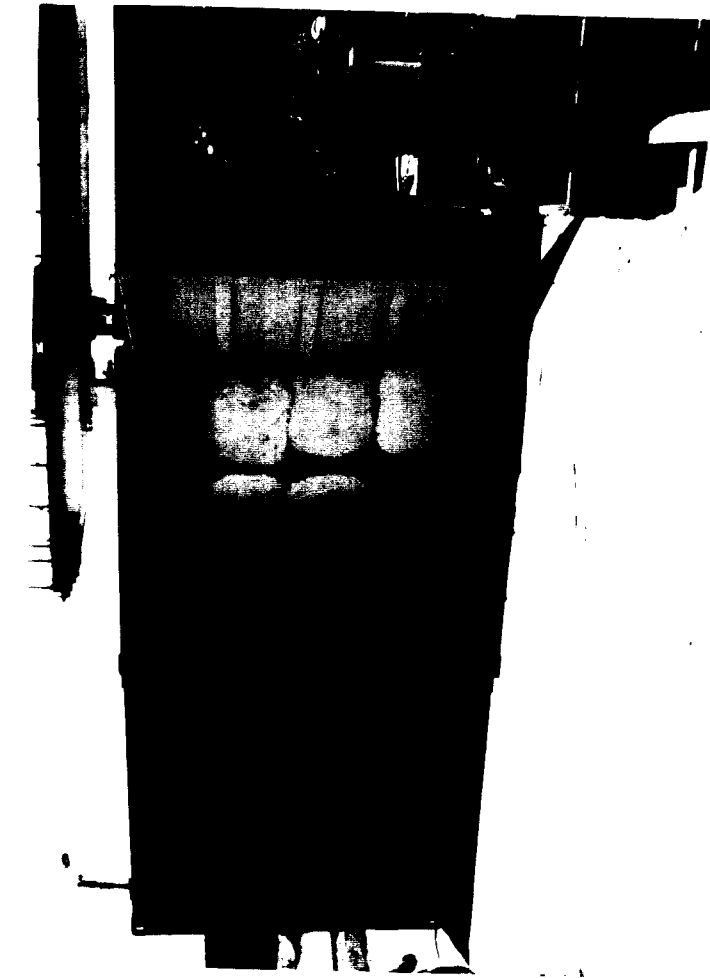
DAMAGE DONE BY CLASSING



DAEWOO "CLASSER" CHECKING BALES  
AGAINST THOSE SELECTED FROM EACH GINN



DIRECT TRANSHIPMENT 50 TON WAGON TO 3 X 20' CONTAINERS



DIRECT TRANSHIPMENT 50 TON WAGON TO 3 X 20' CONTAINERS



INSIDE THE "BUFFER" WAREHOUSE MAX 20,000 TON STORAGE

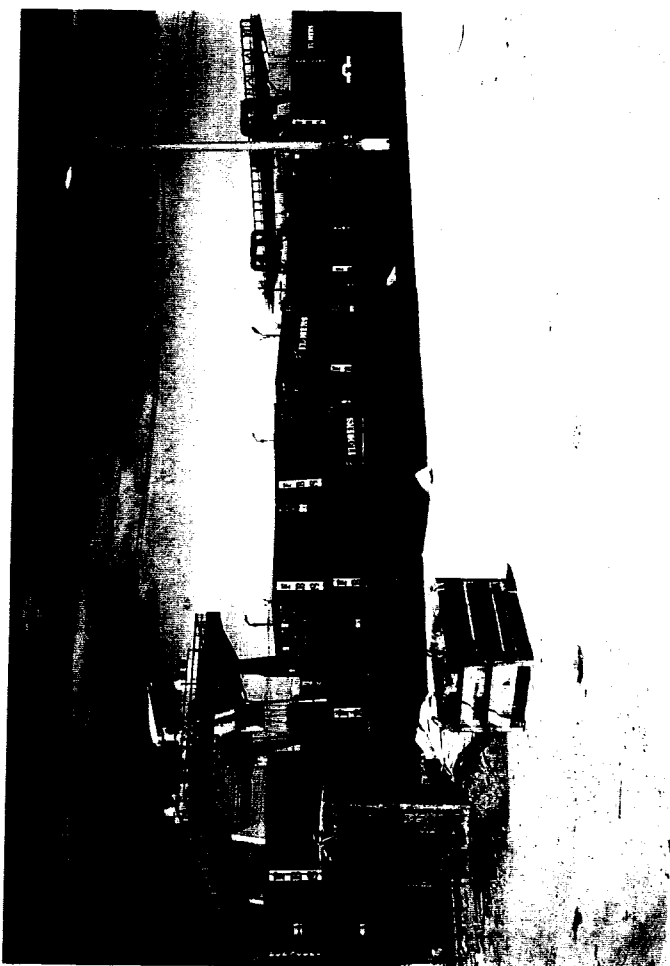
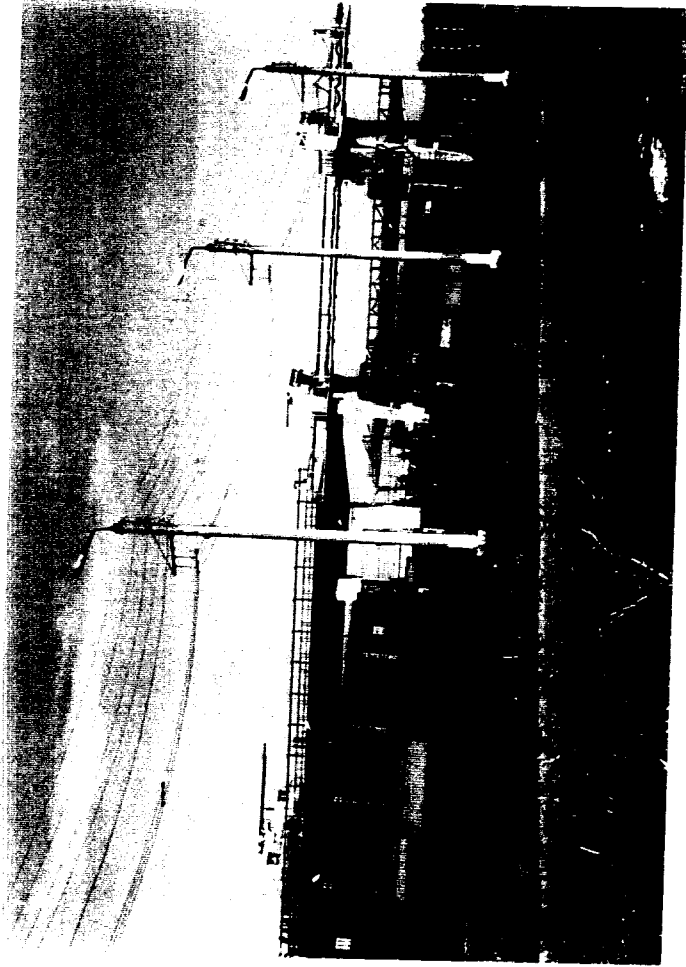




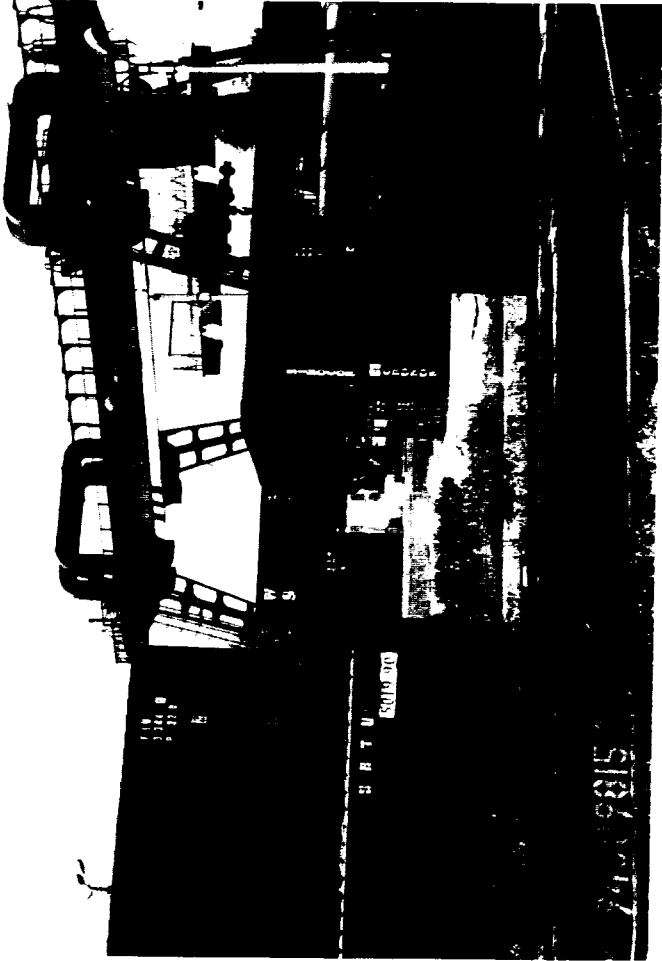
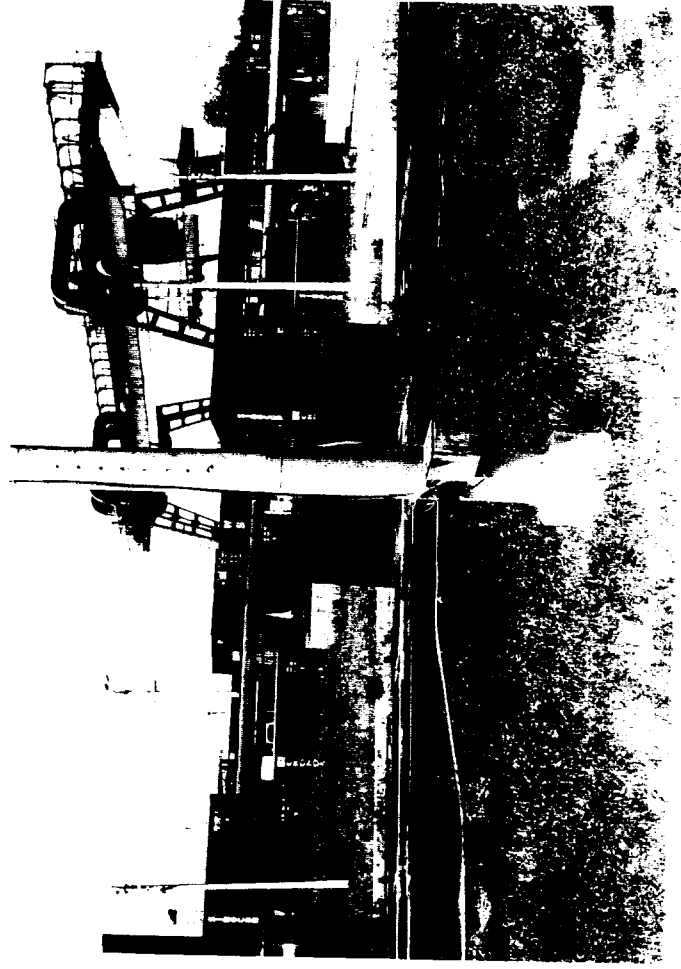
FOUNDATION FOR THE NEW OFFICE  
BY RE-LOAD CENTRE



INSIDE THE "BUFFER" WAREHOUSE  
MAX 20,000 TON STORAGE



SOME 40' CONTAINERS



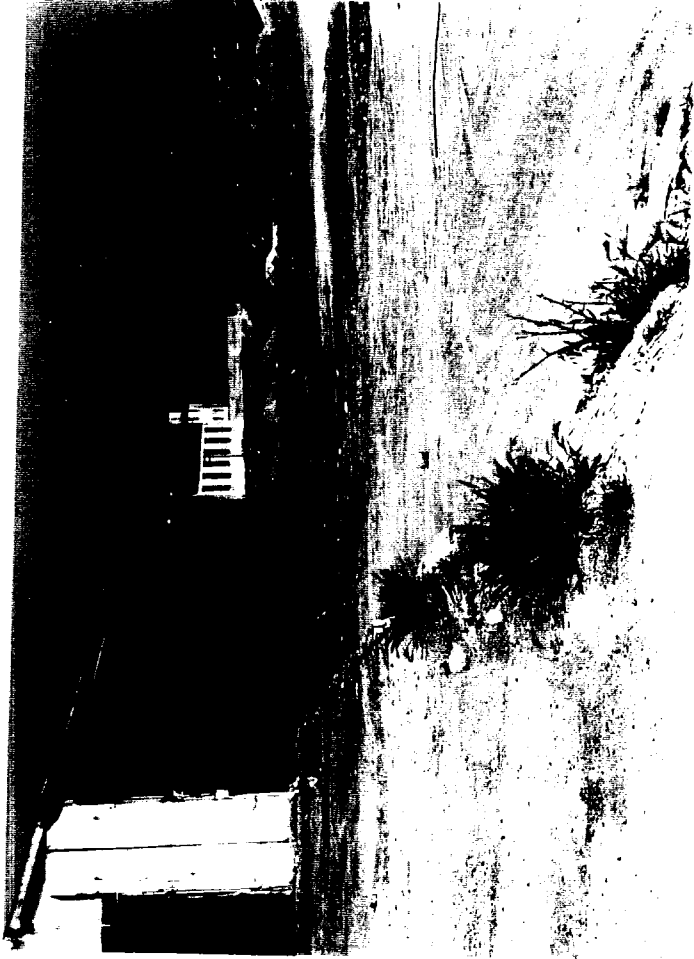
SOME 40' CONTAINERS



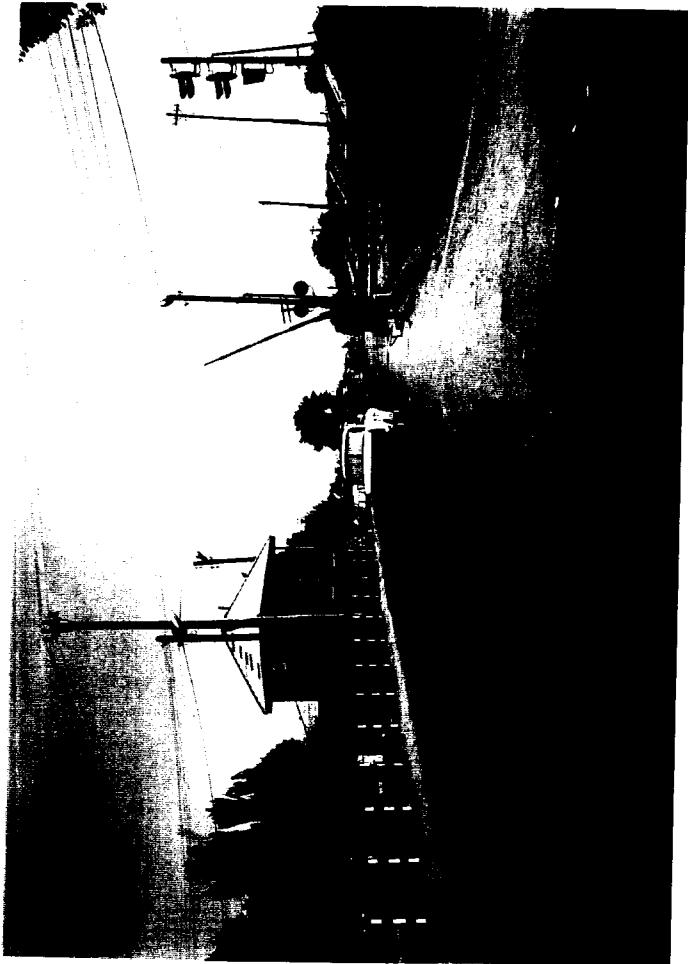
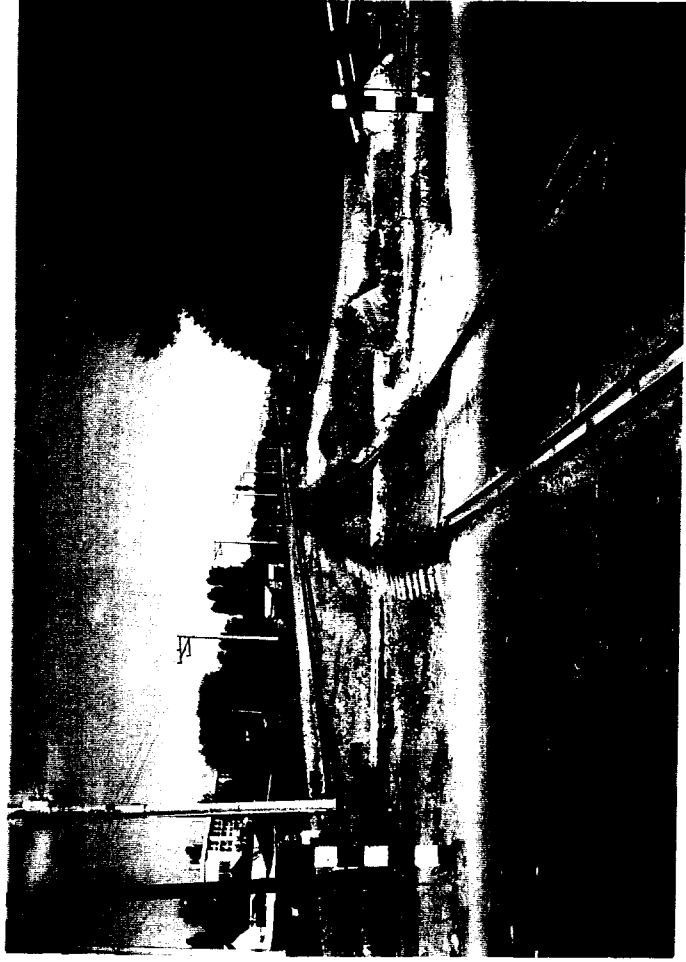
OLD 20,000 TON WAREHOUSE



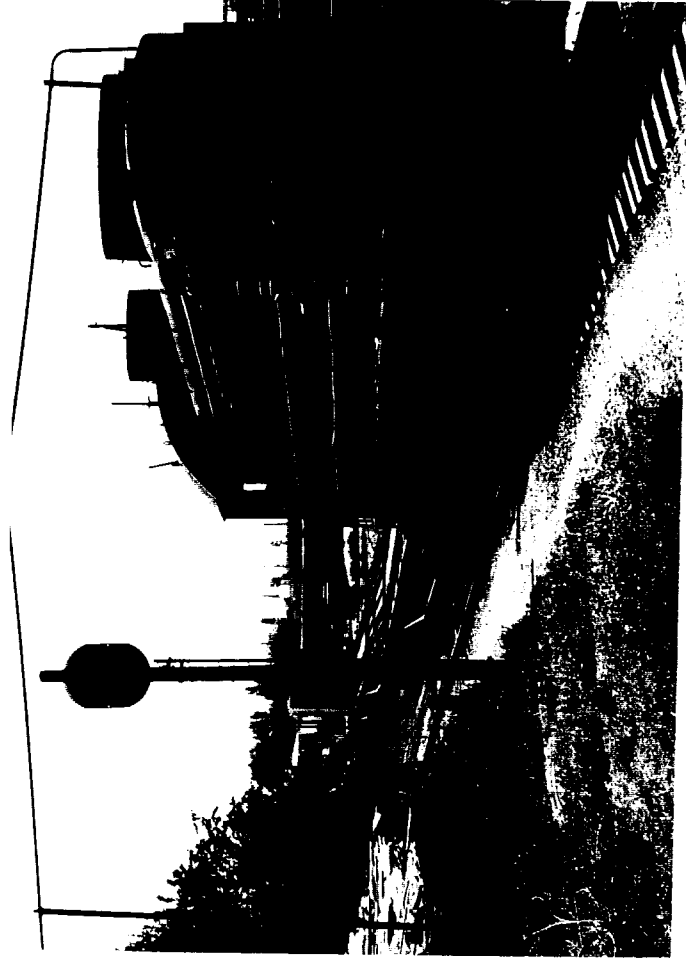
INTO DEPOT



PART OF RELOAD SYSTEM

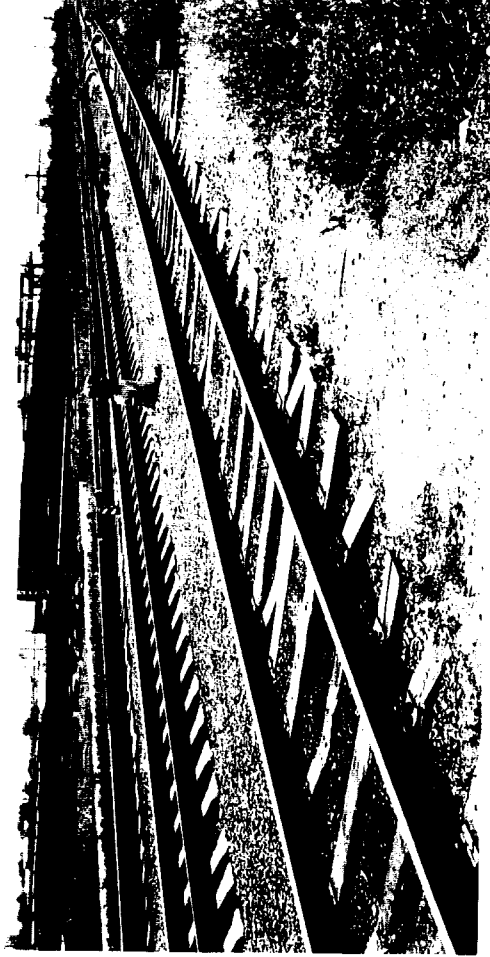


SERGELI STATION  
POOR ACCESS



SERGELI STATION

SHUNTING INTO DEPOT



MAIN LINE

