



05-016-Pegi-RF_en

SCHEMA PROGETTO

Codice	05-016
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Titolo	Studio sull'impatto sociale ed economico della rilocalizzazione delle concerie di magra El Eion, Old Cairo
Data inizio	01-09-2005
Data fine	30-04-2006
Area Geografica coinvolta	Africa
Paese coinvolto	Egitto
Area-Località di svolgimento	Il Cairo
Settore	Conceria
Tipo di Progetto	Assistenza tecnica alla IMC, l'agenzia statale responsabile delle opere civili del progetto di rilocalizzazione per svolgere lo studio di impatto socio economico
Idea Progetto	Progettare le attività di gestione e promozione della rilocalizzazione
Obiettivi generali	Trovare una soluzione che coinvolga tutte le parti in causa, il settore privato ed il settore pubblico, per operare insieme nelle attività di rilocalizzazione
Obiettivi specifici	<ol style="list-style-type: none">1. Mappatura delle imprese da ricollocare2. Identificazione dei bisogni di assistenza tecnica3. Identificazione delle attività da sviluppare4. Identificazione delle istituzioni a cui assegnare i diversi compiti5. Organizzare un calendario complessivo del programma di rilocalizzazione6. Identificare i costi7. Stendere un business plan8. Definire die piani di formazione ed assistenza tecnica per migliorare la tecnologia e la produttività9. Ridefinire le dimensioni del nuovo sito
Tipo di attività svolte	Analisi in loco con visita alle imprese
Valore del progetto	Euro 200.000

Finanziatori	Cooperazione Italiana
Esecutori	PISIE
Partner	IMC
Beneficiari	Settore della concia del Cairo
Responsabile PISIE	Enrico Moriani
Esperti coinvolti	Carlo Milone, Paul Mansley, Giuseppe Clonfero

File di progetto	05-016-Pegi-RF_en
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Note	
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	Indice dei file
05-016-Pegi-RF	Scheda progetto
2	Rapporto
3	Annessi

**Project of relocation and
development of tanneries at Robikki
Area**

**TANNERIES RELOCATION
PROJECT - STUDY REPORT**

Main Report

Authors: Joint Technical Team (JTT)

Team of Experts of ASSOMAC SERVIZI SRL & IMC (tech.)

Principal: Cooperazione Italiana

Beneficiary: Ministry of Foreign Trade and Industry

May 2006



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Acronyms

ASSOMAC	Association of the Italian Leather and Leather Products Machines Manufacturers
BRC	Business Resources Centre
CETP	Common Effluent Treatment Plant
CFC	Common Facilities Centre
CLT	Chamber of the Leather Tanning
EEAA	Egyptian Environmental Affairs Agency
EGP	Egyptian Pound
EIB	European Investment Bank
EU	European Union
FAO	Food and Agriculture Organisation
GIDA	General Industrial Development Authority
GOE	Government of Egypt
GOFI	General Organisation for Industrialisation
IDS	Programme for Development of SWAP
IMC (Dev.)	Industrial Modernisation Centre
IMC (Tech.)	Executive Organisation for Industrial & Mining Projects
JTT	Joint Technical Team
JV	Joint Venture
JVS	Joint Ventures
LTC	Leather Technology Centre
M ²	Square metre
M ³	Cubic metre
MFTI	Ministry of Foreign Trade & Industry of Egypt
MoFTI	Ministry of Foreign Trade & Industry of Egypt Magra El Eion Robikki Tanneries Cluster Implementation Project
MRTCI	Project
OEIMP	Executive Organisation for Industrial & Mining Projects (IMC)
PMU	Project Management Unit
PPP	Public Private Partnership
Sq ft	Square feet
Sq m	Square metre
SWAP	Programme in Exchange for debit RELIEF
TC	Technology Centre
TMRRI	Tanneries Modernisation Restructuring & Relocation Initiative
TOR	Terms of Reference
TSC	Technology Service Centre
TSS	Tanning Sahrng Service

PART I: MAIN REPORT

1. INTRODUCTION

Context

There is a considerable history to the relocation of the tanneries out from the Magra El-Eion area of old Cairo to a new site at Badr City, which needs to be understood by way of background to this report.

Tanneries and Other Businesses

It will be noted later in this report that tanneries represent under half of the businesses located in the Magra El-Eion area. The other businesses can be categorized into four groups:

- Those, such as glue factories, that process a by-product of the tanning activities.
- Services that relate to the existence of the tanneries, such as workshops and stores.
- Services that relate to the existence of the employees, such as shops, cafeterias and kebab houses.
- Other non-tanning industrial activities, such as marble and granite, and carbon black.

The project appears to have concentrated on the tanneries for many years and recent reports, including this feasibility study, have maintained this focus. Although, it is correct that the majority of other businesses are related to the tanneries, and will have to relocate with the tanneries if they are to survive, there is an additional issue over the extent to which these other businesses should be assisted to relocate. This is a key issue which we return to later in this report, though, we are technically acting outside our terms of reference.

Status

This feasibility study was contracted by IMC (Technical) to be undertaken through ASSOMAC. The primary purpose of the assignment was to provide an up-to-date assessment of the project to relocate tanneries from Magra El-Eion to a new Leather District at the Robikki industrial zone, that will be established at Badr City, 40 km east of Cairo. In this background section to the report the reference “Tanneries Relocation Project” is used.

The relocation of the tanneries from Magra El-Eion has existed, as a project, for over 40 years, but it is only in recent years that it has gained momentum to be implemented. The selection of the Robikki area as the recipient site has also existed for many years and it is understood that this selection has recently been endorsed by the main parties that will be behind project implementation. This feasibility study has taken the selection of Robikki as a given and no alternatives have been assessed, or presented.

Basateen

During interviews with the owners of tanneries located in Magra El-Eion we became aware that some have purchased land and buildings at the Basateen area of Cairo, next to the abattoir on the “Autostrad” on the outskirts of Maadi. The facilities at Basateen used to be owned by the former public sector Egyptian Leather Company which was placed in liquidation in 1999. We are aware that about 15 of the owners of existing tanneries at Magra El-Eion purchased the facilities in different lots. We have visited Basateen and can report that only two tanneries are operating, with these depositing their effluent into the City sewers in the same way that is criticized of the tanneries within Magra El-Eion. As the level of tanning activity is low at Basateen, and it does not represent any improvement in the environmental conditions that apply in Magra El-Eion, it has not been considered further.

New Leather District Masterplan

In 1997, the up to then Ministry of Industry selected ASSOMAC to prepare a masterplan to establish the new Leather District. Through the assignment a site of 556,303 m² was allocated with the key manufacturing elements of the new district being:

- Tanneries
- Glue factories
- Leather fibreboard factories
- Leather goods producers

The district was designed to operate as a fully integrated unit, with support services including:

- Leather Technology Centre
- Stores, including: hides and skins; chemicals; finished products.
- Workshops
- Shops, cafeterias, bank and police station.
- Mosque

The role of ASSOMAC was to present detailed recommendations on the technical specification of the new Leather District based on parameters that were provided to it by parties involved in the project.

Italian Involvement

Following the submission of the ASSOMAC report in 1998, and following a period of six years, an approach was made to Italian Co-operation to become involved in supporting project implementation on a bi-lateral basis. In 2004 it was agreed that the Italian – Egyptian Debt Swap Committee would allocate EGP 162 mn of funding towards the Tanneries Relocation Project, as an integral part of establishing the new Leather District at Robikki. Of the total, EGP 159 mn was allocated towards the cost of establishing site infrastructure (external and internal) and the wastewater treatment facility; with EGP 3 mn allocated to provide technical assistance. It is important to note that it was agreed that this funding would be targeted only at the establishment of the tanneries area of the overall Leather District, though, this would include the support services required by the tanneries, such as: the wastewater treatment facility; the Leather Technology Centre; stores; workshops; and public services.

Lead Role for Construction Project

The former Ministry of Industry allocated the task of managing the detailed technical design of the new Leather District to IMC (Technical), an organisation which reports directly into the same Ministry, and provides a supporting role in managing the engineering design and contract management of industrial projects on behalf of the government. The lead role for implementing the new Leather District was also allocated to IMC (Technical), based on the project specification provided by ASSOMAC. The Tanneries Relocation Project therefore became viewed as being primarily an infrastructure, and buildings, construction project. This was inevitable with IMC (Technical) having been put in the lead role.

Business Development Initiative

Towards the end of 2003, the Chamber of Leather Tanning approached the Industrial Modernization Centre (IMC Development) with a request to contract the preparation of an Action Plan for implementing the Tanneries Relocation Project. As IMC (Development) is Egypt's leading business development organization, it applied a different perspective to project design and implementation than had been applied up to then by IMC (Development). The preparation of the Action Plan was started in March 2004 and completed in March 2005. It raised a series of issues relating to the focus being directed too much on the new infrastructure and buildings to be constructed at Robikki, and not sufficiently on the business development requirements of the existing tanneries at Magra El-Eion.

The Action Plan report indicated that the most important objectives of the Tanneries Relocation Project should be to ensure the successful trading of the new tanneries following their relocation from Magra El-Eion and also, to achieve sector development through production facilities modernization, added-value production by moving-up the value chain to produce finished leather and increasing export sales. A key conclusion was that there should be business development activity delivered into the existing tanneries, located in Magra El-Eion, before their relocation to Robikki. This activity should be delivered in parallel to constructing the infrastructure and buildings at Robikki.

A key recommendation was that the Tanneries Relocation Project should be viewed as a business development initiative, incorporating an infrastructure and building construction element, rather than the latter element being in the lead. The difference is encapsulated in the title of the Action Plan assignment which included the statement "relocation of the existing tanneries cluster in Magre El-Eion to a new cluster at Robikki". A key point to understand the nature of the Tanneries Relocation Project is that the existing cluster is based on: old production facilities; traditional production practices; operating in cramped conditions; with poor quality internal roads; non-existent pollution controls; low productivity; and low levels of added-value due to production concentrating on wet blue.

All of features of the existing cluster can be summarized by it having a low level of international competitiveness. International customers are aware of the conditions within the existing cluster and are only prepared to buy wet blue. The international competitiveness of Egypt's manufacturing sectors and businesses is the primary concern of IMC (Development) and it viewed the relocation as providing a one-off opportunity to modernize the cluster to become internationally competitive from its new location at Robikki.

ASSOMAC

Following the start of detailed design activity by IMC (Technical), ASSOMAC was appointed by MFTI, in August 2004, to act as technical consultants for the establishment of the new tannery facilities within the new Robikki Leather District. This role included advising on the design of the wastewater treatment facility, and the design of individual tannery units. ASSOMAC had a dual role to support IMC (Technical) and to report to the Italian – Egyptian Debt Swap Committee on the implementation of the infrastructure and building construction works.

Study of Tanneries Relocation Project

Through the ASSOMAC reporting link, concerns over the scale of the infrastructure and building works were raised in relation to continuing uncertainty over the level of involvement of Magra El-Eion tanneries in the Tanneries Relocation Project. The background to this concern was results from the Action Plan assignment indicating that only a few tanneries in Magra El-Eion were aware of the Tanneries Relocation Project, and many did not have sufficient information on its details to be able to determine if they could accept its terms and conditions.

This conclusion was disturbing to the Italian – Egyptian Debt Swap Committee, and a clause was inserted into the agreement, that apart from the first tranche, the release of any further tranches, would be conditional on the completion of a study of the Tanneries Relocation Project to ensure its successful implementation.

At the same time the definition of success was changed from the implementation of an infrastructure and construction building project, to the implementation of a socio-economic project to benefit the businesses, employees and residents of Magra El-Eion, with environmental benefits to be delivered for the whole of Cairo.

The timing of the imposition of these conditionalities, was before the submission of the Action Plan report, and when IMC (Technical) was still in the lead role, on behalf of the recently re-organized Ministry of Foreign Trade and Industry (MFTI). By the time of the scheduled release of the second tranche it became evident that IMC (Technical) did not have the experience to undertake the required study. The release of the second tranche was agreed, conditional upon IMC (Technical) issuing a contract to ASSOMAC, to undertake the study, on its behalf. This report is the outcome of the study.

Industrial Parks

Strong commitment to the establishment of Industrial Parks, from MFTI, was evident from October 2005, when the formation of the General Industrial Development Authority (GIDA), out of the General Organization For Industrialization (GOFI), was announced. Key features of the new approach to establishing Industrial Parks, include:

- The ownership of the land will be transferred to GIDA, acting on behalf of MFTI.
- The development of each Industrial Park will be progressed under a Private – Public Partnership (PPP) approach to funding, with the land being put into the partnership from the public side.
- A private sector partner will be selected to act as overall Project Manager with the responsibility for: designing the facilities; raising private funding; completing the overall funding package; and managing the construction of the facilities.
- The establishment of the new Industrial Parks will be closely associated with the development of business clusters based on selected industrial sectors.
- The development of clusters will combine the development of indigenous Egyptian businesses with the attraction of inward investment and international strategic partners for the indigenous businesses.
- The delivery of business development activities, vocational training, export promotion, technology transfer, R&D, new product development will be closely associated with the establishment and operation of the Industrial Parks.

Robikki Pilot Project

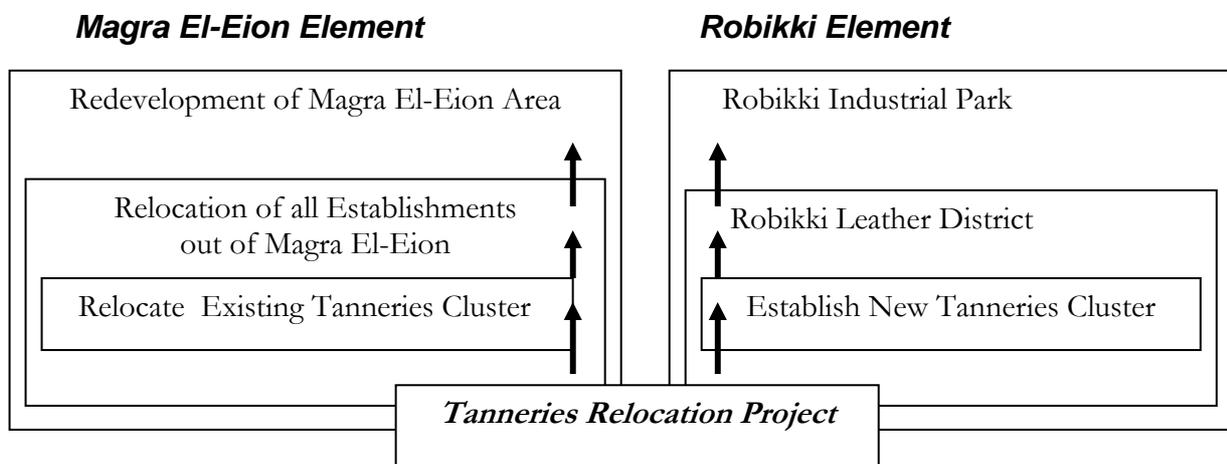
In March 2006 IMC (Development) informed the consultants undertaking this study that the first Industrial Park is to be established at Robikki. This provides a new framework for the planning the implementation of the Tanneries Relocation Project. It can act as a pilot in two ways: the transfer of an existing cluster out of Magra El-Eion with the associated redevelopment of this area; and the establishment of a new cluster at the Robikki Industrial Park. Although the Robikki Industrial Park will include a number of clusters, it should be noted that this study has remained focused on tanneries.

Italian Response

It is important to note that, before completing this study, the Italian – Egyptian Debt Swap Committee, in recognition of the importance being given to progressing the establishment of the Robikki Industrial Park, agreed to release the third, and final, tranche of funding towards the infrastructure and building construction works at Robikki. The justification for making this decision was, that the previous concerns (see above) over the scale of the project and the level of commitment of the tanneries to relocate, had been overcome, as the Robikki site would now accommodate a wider range of industrial activities, rather than being restricted to being just a tanneries cluster. The risk of the infrastructure and building construction works being not utilized had receded sufficiently to allow the funds to be released, without having to wait for the outcome of this study. It is also the case, though, that the positive feedback that was being received from interviews with tanneries located with Magra El-Eion was also taken into account in the Committee reaching its decision.

Role of Tanneries Relocation Project

The role of the Tanneries Relocation Project can now be described in the following diagram, as having two key elements:



The Tanneries Relocation Project will act as the catalyst to achieve the following sequence: implement the relocation of the existing tanneries cluster out of Magra El-Eion; activate the relocation of all establishments out of the Magra El-Eion area; which is a pre-requisite for achieving the redevelopment of the Magra El-Eion area. The Tanneries Relocation Project will also: result in the establishment of the new tanneries cluster at Robikki; provide the first businesses to become established within the Robikki Leather District; which is one of the target sectors for building-up manufacturing activities at the Robikki Industrial Park. The Tanneries Relocation Project has the potential to play this catalytic role, as when the tanneries relocate from Magra El-Eion to Robikki,

then most of the other establishments in the Magra El-Eion area will follow, or will be unable to survive. Likewise, when the new tanneries start to operate from Robikki, they will act as a magnet for leather goods manufacturers to be located close to their suppliers of finished leather. The Tanneries Relocation Project can act as the driver of change and development for both the redevelopment of the Magra El-Eion area and the establishment of the Robikki Industrial Park.

Project Description

The main reason for the preparation of this background section is to provide a position statement on how the project has reached its current stage. The decision for the Robikki to become the first Industrial Park has fundamental implications for the next stage of development of the Tanneries Relocation Project, which is described in the next section.

2. NEW PROJECT

Impact of Robikki Industrial Park

The information that the Robikki Industrial Park will be the first established under the new approach is of critical importance to this study. The key features of an Industrial Park are indicated in the previous section, which provides a fundamentally different basis for progressing the Tanneries Relocation Project, than has applied up to now. Effectively the change represents a new project as it will be progressed and implemented under a new set of conditions.

Approach Up To Now

From the start of the study we had to understand the approach of IMC (Technical) as being in the lead, and its plans for project implementation. It has not been easy to develop such an understanding as the remit for the study has been to apply a business development perspective, whereas as indicated above IMC (Technical) view the project only from a technical perspective to construct infrastructure and buildings. Not only was it difficult to obtain accurate cost information to include in the study, but effectively the study lacked a client. Although a number of attempts were made by the JTT (ASSOMAC experts and IMC technical) to organise public meetings with tanneries, through CLT and MFTI, to provide us with a client, this was not possible. It had been hoped that the “client” would be provided by holding a Steering Committee meeting before the end of the study, but again this was not possible.

New Client

With the Tanneries Relocation Project now becoming part of the Robikki Industrial Park, it is effectively a new project, with the client becoming the way the Robikki Industrial Park will be established and its link into the existing tanneries cluster in the Magra El-Eion area. As we have not been provided with any description as to how the Robikki Industrial Park will be established, we have developed our own structure and approach that will allow the Tanneries Relocation Project to start and be completed as quickly as possible. Our proposals are described in section 4.

Implications For Study

With the change to Robikki becoming an Industrial Park, IMC (Technical) will no longer be in the lead role, which will pass to a new implementation structure. The work that has been undertaken by IMC (Technical) over the last few years no longer provides the basis of making decisions, which will from now on be made through the new project structure, based on a Private – Public Partnership arrangement, see previous section.

The activity we have undertaken to understand the costings prepared by IMC (Technical) can no longer provide the basis of this study as the costings no longer apply. New costings will be prepared under the PPP structure. The work undertaken by IMC (Technical), though, can be used indicatively to reach a final budget.

3. ROLE OF STUDY

Change In Role

This study was originally conceived as a feasibility study of the Tanneries Relocation Project, with the project specification and costs to be provided as by IMC (Technical). It became obvious during the exercise that many of the costs provided to us were estimates and did not provide the basis of a detailed financial appraisal. Considerable effort was made to prepare our own costs, but the change in the project, described in the last section resulted in the study having a different role, which is to facilitate its change from being a project led by the public sector, with IMC (Technical) in the lead role, to a project that will be implemented under a private – public partnership (PPP), with establishment of the new tanneries at Robikki to be progressed under the auspices of the new Robikki Industrial Park.

New Role

The new role of the study is to act as the link between the old and new approaches to progressing the project. As will be seen in the next section a key feature of the new approach is to change the name of the project and to drop the title of “Tanneries Relocation Project” that is used on the cover of this report and in the background description of the project in section 1.

A key role for this report is to act as a position statement on where the project has progressed to and to recommend the basis under which it will move-on to the next stage of its development and implementation. As this should become a public document we do not provide any financial figures as these would be beneficial to property development and construction companies that want to participate in the bidding process to become the private partner. A main objective of the new approach is to have the new tanneries constructed at Robikki at the lowest possible cost, while maintaining minimum infrastructure and building standards.

The main beneficiaries of this new approach will be the owners of the new tanneries who will have to fund their cost share of establishing their new facilities. A main purpose of this report has become to propose the overall project development and implementation framework that will be used progress the project under the new approach and to provide an initial project specification which can be used to brief potentially interested bidders.

The overall project framework is provided in section 4, with a more detailed explanation of the Project Management Unit provided in section 5. A key issue relating to the specification of the new tanneries cluster to be

established at the Robikki Industrial Park is the availability of raw material supply within Egypt, and the level of competition for this supply based on production capacity, with the results of our review activity provided in section 6. The results of a survey of the establishments that are located within the Magra El-Eion area are provided in section 7.

In section 8 we provide an initial specification of the project that should be issued to interested parties that will bid to become the private partner in the private – public partnership (PPP). Section 9 provides an outline of the PPP Funding Package that will be used to finance the implementation of the MRTCI. The next steps towards project implementation are described in section 10.

4. PROJECT IMPLEMENTATION FRAMEWORK

Overall Structure

The proposed new overall project implementation structure is indicated in the diagram overleaf. It is recommended to change the title of the overall project to “**Magra El-Eion – Robikki Tanneries Cluster Implementation**”, abbreviated to **MRTCI**, to avoid confusion with the Tanneries Relocation Project, which as indicated in section 2 has effectively been replaced by the new project. It is recommended MRTCI should have seven key elements:

- Steering Committee.
- Overall Tanneries Representation Group.
- Stakeholders Working Group.
- Project Management Unit.
- Funding Package and Project Timetable.
- Project Development Companies, established and operating under Private – Public Partnerships (PPPs).
- Delivery of a range of business development activities into the tanneries.

Each of the above elements are described in greater detail below.

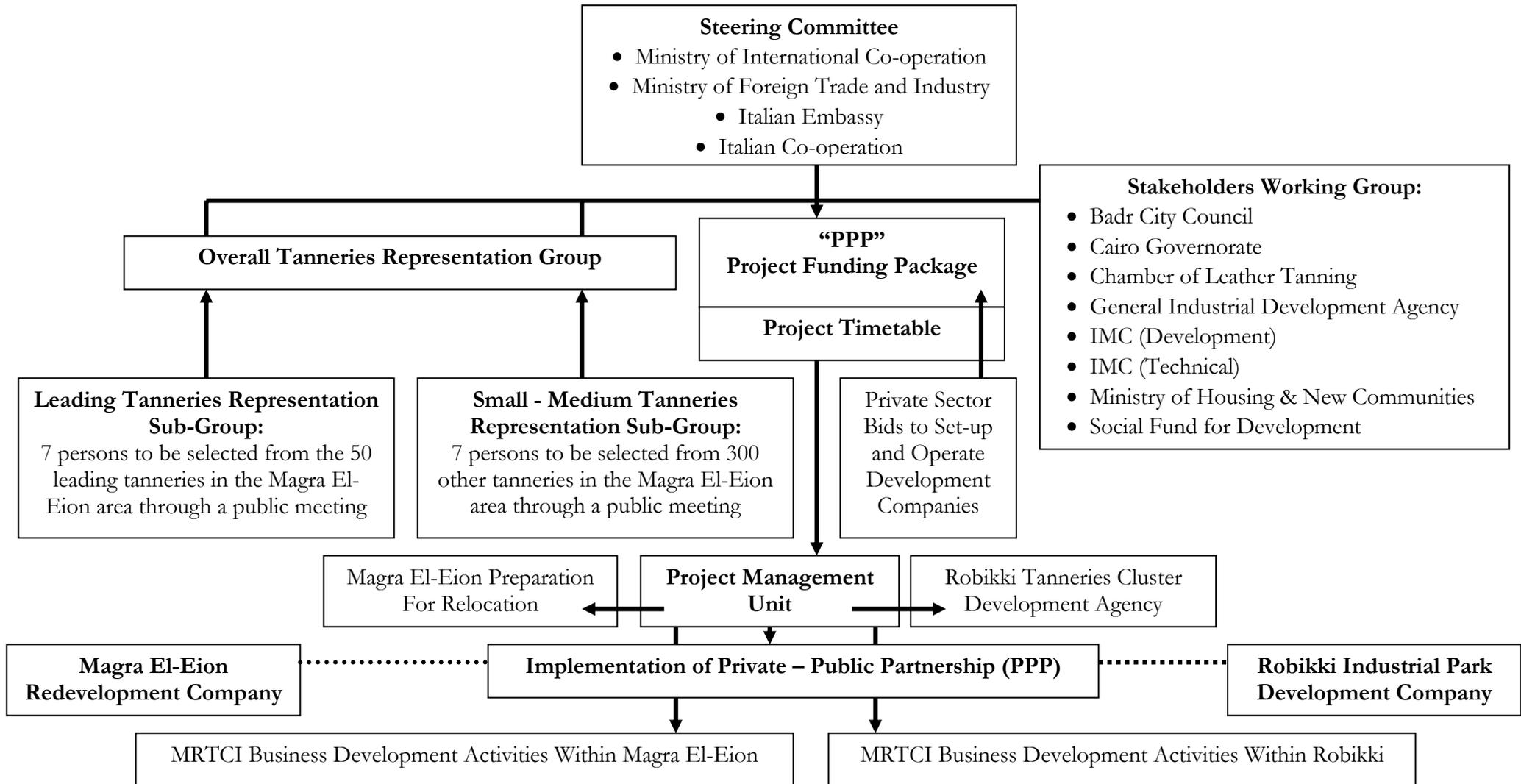
Steering Committee The Steering Committee represents the two main sources of funding for starting to implement the MRTCI: the Government of Egypt; and the Italian Government. So far, only the Italian Government has allocated funds of which over half have been released. The Government of Egypt will start to allocate funds based on the content of this report and specifically based on the outcome of the PPP negotiations with the selected private partner. The Government of Egypt will be represented on the Steering Committee by the Ministry of International Co-operation and the Ministry of Foreign Trade and Industry. The Italian Government will be represented by the Italian Embassy in Cairo and Italian Co-operation.

Overall Tanneries Representation Group The size break-down of the tanneries by land area is:

- Unknown or under 50 m², 16 tanneries.
- Between 50 m² and 500 m², 236 tanneries.
- Over 500 m², 58 tanneries.

Overall Project Implementation Structure – The Strategic Framework

Magra El-Eion – Robikki Tanneries Cluster Implementation Project (MRTCI)



The tanneries that have land area of over 500 m² are taken to be the leading tanneries as they represent the highest production capacities. Tanneries below 500 m² represent units that are likely to be acting on a sub-contract basis for the leading tanneries, as they do not have sufficient production capacity to be able to work directly with customers. There is a danger that the smaller tanneries feel excluded from the MRTCI, as the leading tanneries are more powerful to negotiate their involvement. To avoid this situation emerging, the Overall Tanneries Representation Group should be split into two Sub-groups; with one representing the 58 tanneries that are categorized as leading; and the second representing the 302 tanneries categorized as small and medium. Both categories should agree on the selection of seven representatives to form their Sub-groups, with the selection process to take place during effectively communicated public meetings.

Both categories of tanneries (leading and small – medium) will each be allocated 50% of the production facilities to be established at Robikki, but one group can negotiate with the other to increase its percentage.

The ideal situation will be that the two Sub-groups can agree a basis of working together, to act as one representative body. If this is not possible, due to conflicts between the two groups, they will each have their own separate representation Sub-groups. Having separate Sub-groups will weaken the negotiating position of the tanneries, but if co-operation is not possible there should not be delays to implementing the MRTCI. It may be possible that the two sub-groups can agree to co-operate on certain issues, and not on others, and this should be allowed if it is the only way co-operation can be achieved, as this would be better than not having any co-operation at all.

It should be noted that the results of the financial assessment of the Tanneries Relocation Project will be made available to the Overall Tanneries Representation Group to provide them with briefing on the costs that had been anticipated up to the change in approach for progressing the project. The objective should be to find ways of obtaining lower costs through the negotiations with the party(ies) that are behind the Robikki Industrial Park Development Company.

Stakeholders Working Group This is the working engine of project implementation which will co-ordinate all aspects of MRTCI planning and implementation, except the funding being made available from the Government of Egypt and the Italian Government. The parties involved in the Stakeholders Working Group will not be putting capital funding into the project, but will be supporting the project in other ways. Each stakeholder will be allocated specific tasks to be undertaken within set timescales to ensure MRTCI implementation is being kept on track, and on time.

The list of organizations provided in the earlier diagram represent the starting members of the Group, which can be expanded as requirements for other stakeholders to be included are identified.

Project Management Unit The Project Management Unit (PMU) will act as the Executive Team to action all aspects of implementing the MRTCI. It will provide executive support to the three elements described above and will be responsible for day-to-day co-ordination, between all parties. Specifically, the PMU will act as the Secretariat and Executing activity of the: Steering Committee; the Overall Tanneries Representation Group; the Leading Tanneries Representation Sub-group; the Small – Medium Tanneries Representation Sub-group; and the Stakeholders Working Group.

The PMU will also act as the catalyst to set-up the two Development Companies under the new approach of PPP funding. A more detailed description of the role of the PMU is provided in the next section.

The PMU should be set-up to operate on an out-sourcing basis, with its costs built into the overall MRTCI budget and Funding Package, see next section.

Funding Package and Project Timetable The funding package will indicate how the total budget for all aspects of implementing the MRTCI will be financed over a period of up to 6 years, when all of the new facilities are completed and fully operational at the Robikki Industrial Park. This will include: all funding sourced on a commercial basis; assets that are transferred into the fund, such as land at Robikki; grants to meet the cost of funding technical assistance; and the realization of the value of existing assets where part, or all, of the proceeds are transferred into the funding package. The funding package will include the agreed budget for all construction works to be undertaken at Robikki to establish the new Tanneries Cluster by the private developer partner.

The key parties to agreeing the structure and content of the overall funding package will be: the Steering Committee; the Overall Tanneries Representation Group; selected private development company partners; and to a lesser involvement extent the organizations represented on the Stakeholders Working Group, as they will be providing lower levels of funding. In this report, we provide a proposed basis of putting together the PPP funding package, but it is understood that our proposals will only provide a framework within which the Steering Committee, the Overall Tanneries Representation Group and the private development company partners will negotiate a final deal, which will have PPP funding at its core. This uncertainty is because the private sector party to the PPP has still to be identified and the negotiations cannot start until the party has been selected.

A central feature of the PPP will be the level of funding that is to be provided by the tanneries, under the private side of the funding package. The Overall Tanneries Representation Group must be involved directly in finalizing the PPP Funding Package, as the MRTCI will only work if they agree to input their part of the overall funding (this may be more in the form of incurring liabilities, than injecting their own funds). It is important that these negotiations do not drag-on too long, and the Steering Committee should have the right to impose a time limit for completing the negotiations, otherwise the funds that are proposed to be made available for project implementation will start to

disappear and the fallback position of forced evictions will have to be put back on the agenda.

PPP Development Companies The formation of two commercial Development Companies is envisaged, each will operate under the PPP approach to funding project implementation. One Company will be responsible for implementing the Robikki Industrial Park, including: finalizing the private element of the funding package; designing the Park layout and buildings; managing the construction of the Park's infrastructure and facilities; and achieving the occupation of the tannery buildings by the new tannery businesses. The second Company will be responsible for undertaking the same role relating to the Redevelopment of Magra El-Eion, except this will have a range of mixed-use commercial and residential property developments, including "public good" projects, but no tanneries. It is possible that both projects could be implemented with the same private sector partner, or consortium. This cannot be decided now and will depend on the outcome of discussions with the potential partners.

The parties behind the two Development Companies should be selected competitively based on the outcome of a bidding process that will determine the final funding package for the MRTCI. Section 8 provides an initial specification of the new Tanneries Cluster, which can only be finalized based on the direct involvement of the Overall Tanneries Representation Group in determining the final specification.

Delivery of Business Development Activities A key element of the MRTCI is the transformation of the existing tanneries cluster at Magra El-Eion into a modernized, and internationally competitive, cluster that will operate from Robikki. There is a danger of focusing too much on the funding package of the PPP, and the construction work to be undertaken at Robikki, as these will be the tangible elements of overall project implementation. The most important element of the MRTCI is that the tanneries become successful internationally oriented businesses after relocating to Robikki, where the key determinant of success is that they achieve sufficient profitability to be sustainable in the longer-term. This will require the delivery of a range of business development activities into the tanneries, both while they are still operating from Magra El-Eion and after they have relocated to Robikki. Managing the delivery of these business development activities will be the responsibility of the PMU.

Cross Relationships Between Elements of MRTCI

The following are the key cross relationships between the seven elements of the MRTCI, described above:

- It should be possible to hold meetings between the Steering Committee and the Overall Tanneries Representation Group, or its Sub-groups, without any other parties present, where the Steering Committee will be

acting in the capacity of “Project Champions” and the Overall Tanneries Representation Group as “Beneficiaries”.

- The Overall Tanneries Representation Group will nominate two of its members, one from each Sub-group, to act as observers for Stakeholder Working Group meetings.
- The PMU will attend all meetings of the Steering Committee, but can be asked to leave if the Committee needs to discuss the performance of the PMU.
- The PMU will take the lead in setting a program of meetings of the Stakeholders Working Group, but the PMU’s Executive Team can also be in frequent direct contact with individual member organizations of the Working Group to ensure their allocated responsibilities and tasks are being progressed on time.
- There should be close working relationships between the PMU and the Overall Tanneries Representation Group, and / or its Sub-groups. The tannery representatives should have confidence that the staff of the PMU can be trusted to be working in the best interests of all tanneries. Although the PMU will have responsibilities towards all parts of the MRTCI structure, its most important role will be to support the Overall Tanneries Representation Group to negotiate a deal that is advantageous to its member tanneries.
- Members of the Representation Sub-Groups will be free to request meetings with members of the PMU at any time to discuss specific issues.
- The PMU will manage the process of selecting the private sector partners for establishing the two Development Companies, based on the business, or consortium, that submits the best offer. This will include preparing the instructions for bidders and setting the selection criteria. The final decision on selection will be made by the Steering Committee, with the involvement of the Overall Tanneries Representation Group.
- The PMU will monitor the implementation of the new Tanneries Cluster at the Robikki Industrial Park, by the Robikki Industrial Park Development Company, to ensure the construction activities are being undertaken on time and to specification, and are being kept within budget.
- The PMU will monitor the transfer of funds from the Magra El-Eion Redevelopment Company into the MRTCI funding package to check that it keeps to its commitments.

Public Implementation

The term “public implementation” is used as the structure below is how the overall project will be presented to the public, in particular people and businesses which have some relationship with the Magra El-Eion area.

The core of the MRTCI is comprised of:

- Relocating the existing tanneries from the Magra El-Eion area of Cairo to leave this area empty of any tanning activities.
- Development of new tanning facilities at the Robikki District of Badr City to accommodate the tanneries relocating from Magra El-Eion.
- The modernization of the tanneries through the relocation process to become internationally competitive businesses producing tanned leather, capable of producing high quality finished leather and therefore adding maximum value to the input raw hides and skins.

Other elements of the MRTCI, which will play significant roles in determining its success, but should not be viewed as being core activities are:

- Relocating “other business establishments” (for definition see below) from the Magra El-Eion area of Cairo to leave this area empty of all activities that are associated with tanning leather. These “other business establishments” are split into:
 - Services that support tanning leather, such as: raw hide and skin stores; leather stores; chemical stores; and maintenance workshops.
 - The processing of by-products, such as: glue manufacturing; and intestine processing.
 - Services related to tannery employees, such as stores, cafeterias and kebab outlets.
- The redevelopment of the Magra El-Eion area, which includes three sub-elements:
 - Removal of the current pollutants and environmental problems that have been associated with the tanning processes and could be causing public health problems. Specifically, this element will involve the removal of contaminated soil from the area.
 - Development of the Magra El-Eion area to provide a range of new facilities and activities that are in keeping with its location, between the commercial centre of Cairo, and historic Old Cairo. The facilities and activities could include: hotels; offices; retail; residential; tourism; crafts; and many more. There is the option to establish a “link with the past of

the site” through creating a traditional crafts area that could include workshops producing indigenous leather products.

- Development of the Magra El-Eion area to provide a range of “public good” facilities and activities, such as a park.
- Establishment of an Industrial Park at Robikki, on a commercial basis, of which the new Tanneries Cluster will be only one of the industrial activities. The Robikki Industrial Park will be designed to appear, and to operate, to international best practice, including: being eco-friendly; attractively landscaped; on-site support services (“common facilities”); and cluster development activities, such as R&D, technology transfer; product testing; product development; and business development delivery.

The above three areas of activity are essential for the successful implementation of the MRTCI, but as long as they are being progressed within an overall strategic framework, they do not need to be implemented through the same structures as indicated in the earlier diagrams. The key links between the MRTCI and the other three elements are:

- All business establishments that are currently located within Magra El-Eion need to feel that the redevelopment of the area is real and the organizations behind the redevelopment process are serious, committed and will make it happen.
- Part of the redevelopment value of the Magra El-Eion area should be transferred into the PPP Funding Package to assist with funding the implementation of the MRTCI. Without the voluntary relocation of the tanneries out from Magra El-Eion, its redevelopment will be theoretical, and nothing will be progressed unless they are forcibly evicted. By volunteering to participate in the overall project the tanneries will be giving-up potential land rights (if actual land ownership cannot be demonstrated) which could be claimed based on long-term occupation. As of now, the value of any piece of land within Magra El-Eion is low due to a combination of the: environmental problems; types of neighbouring activities; access problems into the site; and lack of modern utility services. By agreeing to relocate, the tanneries will be kick-starting a process which will result in the above issues which are adversely affecting land values being addressed, with a consequent substantial increase in the value of every square metre within the area. A fundamental principle of overall project implementation is that the tannery businesses currently operating from Magra El-Eion should receive a fair share of the increase in value of the total Magra El-Eion land area, that will be realized through its redevelopment.
- The range and quality of the facilities that will be established at Robikki will contribute to achieving the objective of having a new cluster of tanneries that are internationally competitive businesses, producing high quality tanned leather that adds maximum value to the input raw hides and skins.

- Addressing socio-economic issues relating to the futures of the non-tanning businesses currently operating from Magra El-Eion. The survey of the area indicated there are 414 “other business establishments”, with the definition of “establishment” being that an area of land has been allocated to the business, but this does not indicate if the business is still operating. In addition there are 31 other establishments which are houses, mosques and vacant sites, which do not fall under the category of “other business establishments”. Two points need to be taken into consideration relating to these “other business establishments”:
 - The focus of this feasibility study has been restricted to the tanneries located within Magra El-Eion.
 - Most of the “other business establishments” are commercially related to, and dependent on, the tannery businesses to survive. They will not be able to continue operating from Magra El-Eion when the tanneries have relocated to the Robikki Industrial Park. The owners of these businesses have three options: relocate to Robikki with the tanneries, assuming their activity will still be required; pursue some other business activity that is not related to the tanneries, and can be set-up anywhere; or retire from being in business.

Allocating the socio-economic issues to the non-core category of elements is based on the focus of the current feasibility study. It is recommended that the Steering Committee should decide whether addressing the needs of all, or some, of the “other business establishments” are to be included as a core activity of the MRTCI.

It is important that all parties associated with the overall project understand its structure and strategic framework to ensure the same messages reach the public, either through communicating with businesses located within Magra El-Eion, or in media interest in the overall project. Meeting this objective requires clarity in determining overall project structures and responsibilities.

Establishing the PPP

The term “Private – Public Partnership (PPP) applies at three levels within the MRTCI:

- PPP Tanneries Development Project, which relates to the development of Egypt’s largest cluster of tanneries from operating to traditional and out-dated practices, which are preventing it from becoming internationally competitive, to becoming a modern cluster that operates to international best practices.
- PPP funding package to achieve the dual objectives of undertaking the Tanneries Development Project and relocating the tanneries to the Robikki Industrial Park.

- Construction of the tanneries cluster at the Robikki Industrial Park.

In Europe the term PPP is increasingly being used to relate to the funding mechanism to undertake infrastructure, such as roads, and public services projects, such as hospitals. In Egypt PPP has a wider economic development context when applied alongside a sector focused business development project, such as the MRTCI. The Steering Committee will be in the lead to enter into PPP contracts where the overall development objectives will be delivered by the PMU and the construction activities will be delivered by the Robikki Industrial Park Development Company. The funding package will be managed on a joint basis between the Steering Committee, with the PMU acting on its behalf, and the Robikki Industrial Park Development Company. The role of the PMU, relating to the funding package will be to monitor its operation on behalf of the Steering Committee, but also to ensure the beneficiary tanneries receive their completed new tanneries, fully equipped, on the terms and conditions stated in the PPP contract.

Robikki Industrial Park Development Company

The selection of the private sector party(ies) that will act as the Robikki Industrial Park Development Company should be undertaken on a competitive basis. The key requirements of the entities that bid to be given the position should be:

- Demonstration of a thorough understanding of how the Strategic Framework indicated above will work.
- Ability to raise finance on commercial terms to become part of the funding package.
- Experienced in managing large scale industrial construction projects.
- Ability to provide innovative proposals on how to establish links between the Robikki Industrial Park Development Company and the Magra El-Eion Redevelopment Company. This could involve the same entity bidding to fill both Development Company positions. The key issue is for detailed proposals to be submitted on how to extract value from the redevelopment of the Magra El-Eion redevelopment to become part of the funding package for the MRTCI.

It is recommended that the approach to selecting the private sector party(ies) to establish and operate the Robikki Industrial Park Development Company should be for the Steering Committee to issue a tender which will be divided into: minimum requirements; and areas requiring innovative proposals. The areas of minimum requirements will include:

- Infrastructure and building specifications.
- Maximum budget for infrastructure works and the construction of buildings.

- Maximum public sector financial contribution.
- Accounting standards.

The areas where innovative proposals will be requested are:

- Accessing commercial funding to provide project finance.
- Approach to extracting value from the redevelopment of the Magra El-Eion site.
- Hand-over of the completed tannery buildings to the tanneries, including the purchase of all equipment, through a single financial mechanism and to keep repayments simple for the new tanneries.
- Introduction of flexibilities into the design of individual tannery buildings and the point at which the owners of new tanneries can have the buildings transferred to them for completion.

Pilot Project

The MRTCI will be a pilot project in four ways:

- Robikki will be the first Industrial Park set-up under the auspices of the recently established General Industrial Development Agency (GIDA).
- It will provide the first opportunity to put together a PPP funding package that relates to an Industrial Park and supports the modernization of a significant industrial cluster.
- The relocation of the tanneries will be progressed on a voluntary basis, with every effort being made to avoid having to enforce evictions as has been the approach under similar relocation initiatives.
- The modernization of the cluster, and supporting the tannery business to become more internationally competitive, will be achieved through the application of business development activities that will be delivered as integral parts of the relocation project.

The implementation of the MRTCI will act as a demonstration project for the establishment of other modern clusters in other industrial sectors, or sub-sectors. It is therefore important to get the overall strategic framework of the overall project, and the management structure of its individual elements, right from the start to give it the best chance of being successful.

5. PROJECT MANAGEMENT UNIT (PMU)

A key element of the MRTCI is the PMU, which will act as the catalyst to set-up and co-ordinate all aspects of the Strategic Framework, see diagrams in the previous section. The parties will search about the founding sources of PMU.

Two Stages

The PMU will have two stages to its operation:

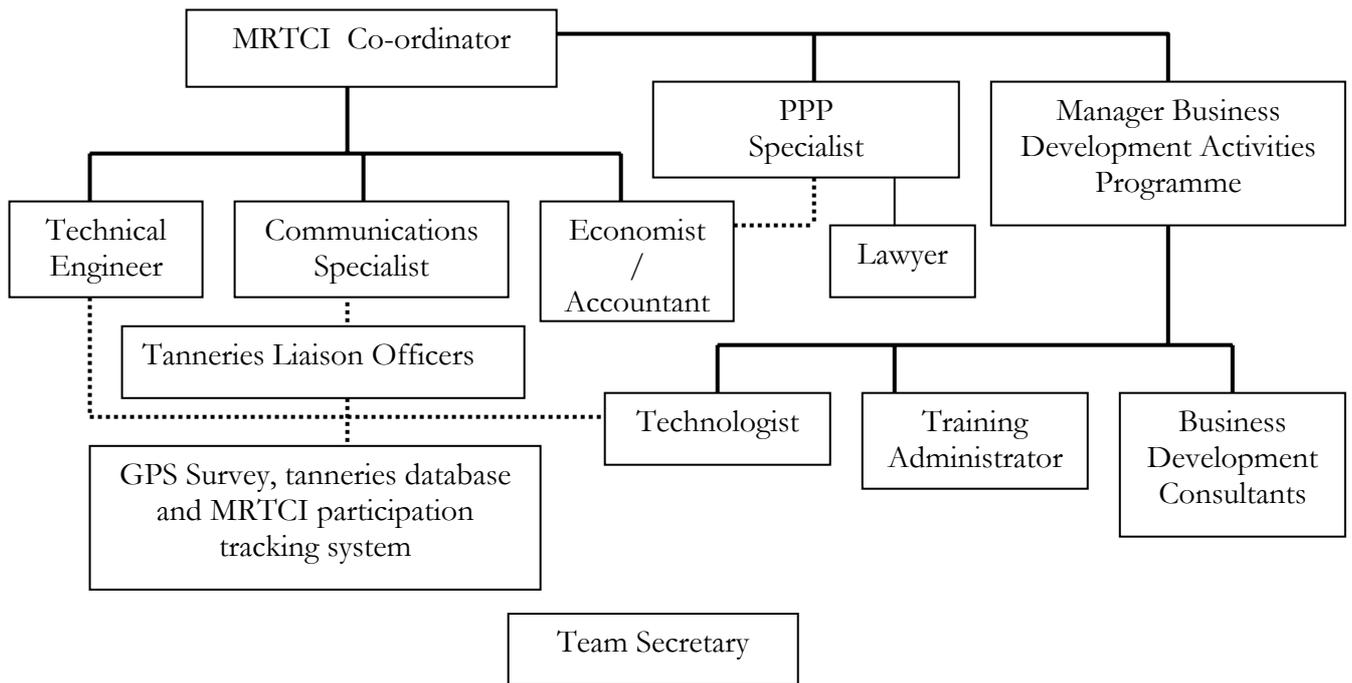
- Magra El-Eion Preparation for Relocation.
- Robikki Tanneries Cluster Development Agency.

The range of activities it will deliver during the first stage will be focused on preparing for the relocation of the existing tanneries to become new modernised tanneries. During the second stage it will concentrate on developing the new tanneries to realise their full development potential. As the relocation of the tanneries from Magra El-Eion is likely to be phased there will be a period when there are two PMUs, operating from Magra El-Eion and Robikki. When all of the tanneries have been relocated the Magra El-Eion PMU will be closed.

First Stage Organisation Structure

The PMU will have the following organisation structure during its first stage of activity:

First Stage – Magra El-Eion Preparation For Relocation PMU



The first stage PMU will include three key management positions:

- The MRTCI Co-ordinator, who will also act as the PMU Manager. This position will be responsible for setting-up and the operation of the overall MRTCI framework described in the previous section. As indicated earlier in this section the PMU will play a crucial role in co-ordinating activities between the Overall Tanneries Representation Group, the Stakeholders Working Group and the Robikki Industrial Park Development Company. This position will be responsible for finalising the detailed project specification that will be issued by way of tender documents to the interested bidders to become the developpers
- PPP Specialist who will be responsible for putting together the PPP contract with the Robikki Industrial Park Development Company, including the structure and operation of the Funding Package. The first stage of this activity will be to put together the tender documentation to which the potential private partners will respond. There will be an intensive period of input from this position until the PPP contract is operational, but thereafter there should be six monthly monitoring visits.
- The Manager of the Business Development Activities Programme who will manage the delivery of business development activities into the tanneries before and after their relocation.

The positions under the key management positions are:

To Support the MRTCI Co-ordinator:

- Technical Engineer to advise of all technical aspects of both the establishment of the new Tanneries Cluster at the Robikki Industrial Park, and the relocation of the tanneries from Magra El-Eion.
- Communications expert who will manage the liaison between the PMU and the Overall Tanneries Representation Group, its two sub-groups and day-to-day contact with tanneries in the Magra El-Eion area. This position will also be responsible for overall project PR and media liaison.
- Economist / Accountant who will be responsible for overall monitoring of MRTCI implementation and to ensure all parties are keeping to their commitments, with them delivered on time. This position will be responsible for monitoring the activities of the Robikki Industrial Park Development Company and the operation of the Funding Package. This position will prepare monitoring reports to a format set by the PPP Specialist who will provide monthly feedback on project implementation and funding.
- The out-sourcing of activity relating to GPS Survey, tanneries database and MRTCI participation tracking system. This activity will prepare a digital map of all of the tanneries in the Magra El-Eion area, which the location of each mapped with its base data held on file. The base data will include the results of the survey of the area, see section 8, and the results of questionnaires applied by various parties when the project was still under the lead role of IMC (Technical). The database will be structured to hold increasing amounts of information on how each tannery is participating in the MRTCI. It will also include a tracking system for recording all contacts between the PMU and each tannery, including their participation in business development and skill up-grading activities.
- Tanneries Liaison Officers who will spend their time working between the Project Office and the tanneries in Magra El-Eion. These liaison personnel will either see the owners / managers of individual tanneries in the Project Office, or will visit the tanneries in Magra El-Eion. Their role will be to both keep the tanneries informed on the overall progress with implementing the MRTCI, obtaining the formal agreement of each tannery to join the project and to enlist the involvement of the tanneries in the business development and skill up-grading activities.

To Support the PPP Specialist:

- A lawyer who can advise on how the PPP contract can be set-up within Egypt's legal system and to prepare the legal aspects of the PPP contract.
- The Economist / Accountant, see above.

To Support the Manager Business Development Activities Programme:

- Technologist to ensure that the new tanneries will be equipped to be capable of operating to international best practice, but using equipment that is appropriate to the skill levels that can be attained by the tannery employees. The Technologist will advise on the technology content of training and consultancy activities to be delivered through the Business Development Activities Programme and will be responsible for delivering some of these activities. The position will also advise the Technical Engineer on technological aspects of the infrastructure and buildings to be constructed at Robikki, including the Leather Technology Centre.
- Training Administrator who will organise the participation of tannery employees in skill development training. This will be in two stages: to be able to produce high quality crust before moving from Magra El-Eion; and to be able to produce high quality finished leather after arriving at Robikki.
- Consultants will be used to deliver the main content of the Business Development Activities Programme to the structure that is agreed with the funder(s) of this element of the MRTCI. During the first stage PMU the following business development activities will be delivered:
 - Establishment of groups of existing tanneries to establish the new tanneries.
 - Management Development Programme for the owners and managers of the existing tanneries.
 - Preparation of Business Plans for the establishment of each of the new tannery businesses.
 - Putting together complete funding packages for each new tannery business including areas not covered by the PPP Funding Package, such as (possibly) working capital. The delivery of this area of activity cannot be determined until the PPP Funding Package has been put together.
 - Export development assistance to open-up new markets, and generate sales, for crust and finished leather.

- Assistance to identify and secure the involvement of international strategic partners.
- Team Secretary to cover all of the above positions.

Second Stage Organisation Structure

The following are key differences between the first and second stage PMUs:

- There will be the need for continuing delivery of business development and skill training to support the new tanneries to develop from producing crust to high quality finished leather, with this requirement lasting for 18 months after the last tannery has relocated to Robikki.
- The establishment of a permanent Leather Technology Centre to operate as a provider of services to the tanneries within the Tanneries Cluster. The most important services that will be made available to all of the new tanneries include:
 - Operation of a model tannery to act as a demonstration project for the new tanneries on how to move-up the product value chain to produce high quality finished leather, and also how to operate to the new environmental standards.
 - The model tannery will also provide a training facility for up-grading employee skills and to stamp-out traditional practices that will no longer be appropriate in the new tanneries.
 - Chemical testing to identify the most appropriate formula to process different types of hides and skins to produce the best finished product results, but also to produce effluent that is within the acceptable ranges to be treated at the wastewater treatment facility. This area of services could also test the chemical composition of the tanning processes to check that actual production is complying with minimum standards.
 - Product testing to provide evidence that finished products meet the importing regulations and customer specifications.

Up to now it has been planned that this will be implemented as a Ministry of Foreign Trade and Industry project, to its specification and through its funding. With the involvement of the Robikki Industrial Park Development Company there is the option to have the establishment of the Leather Technology Centre included as an element of the MRTCI and included in the overall Funding Package. This point needs to be clarified with the Steering Committee. If the flexibility exists we suggest the title of the Leather Technology Centre should be changed to Tanneries Cluster Development Centre, or Leather Cluster Development Centre. The reasons for making this suggestion is that technology will be only one of a

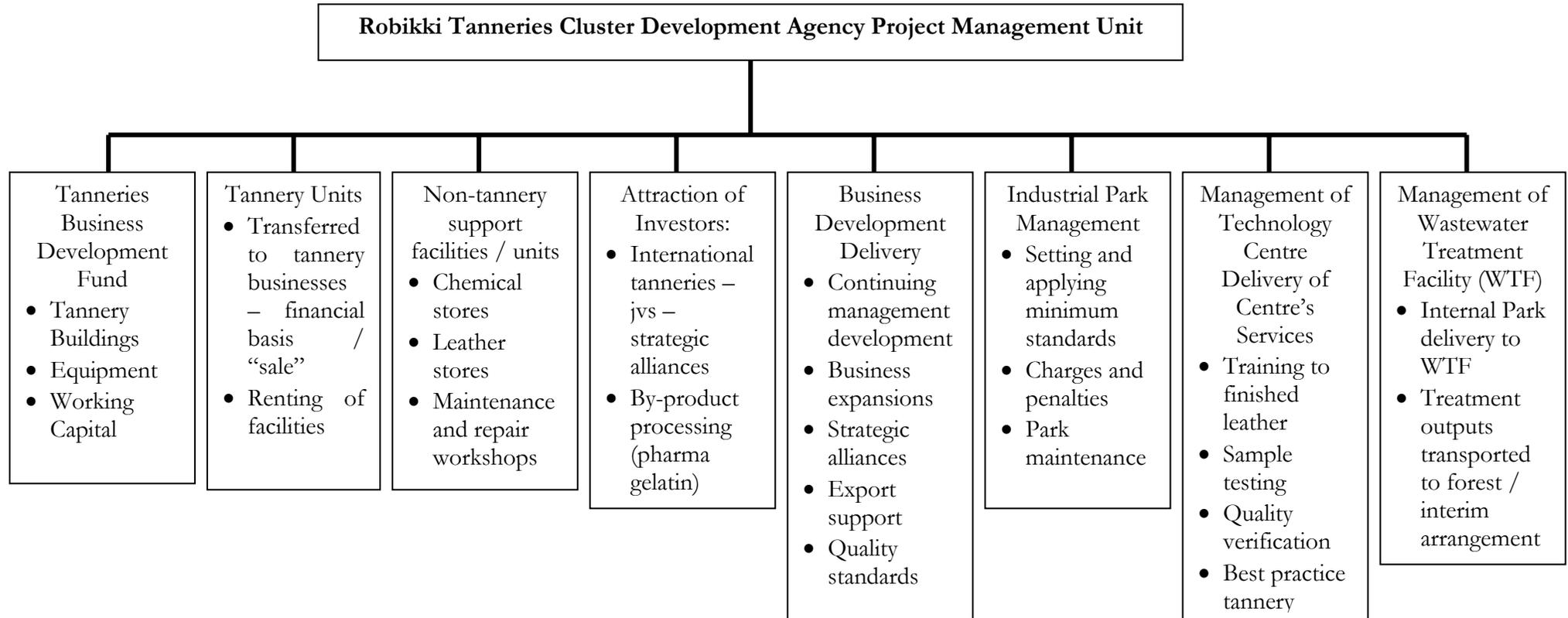
range of development activities that will be delivered from the centre and it would make sense that it accommodates the PMU.

- The main construction work of establishing the Tanneries Cluster at the Robikki Industrial Park will have been completed, though, there may be further construction activity to extend any of the new tanneries, or to build additional tannery units. There will be a series of ongoing management requirements, which will include:
 - Maintenance of the tanneries part of the overall Robikki Industrial Park.
 - Checking each tannery is operating to the minimum standards that will have been imposed as a condition of them being allowed to operate from the site.
 - Operation of the wastewater treatment facility, including delivery of the effluent to the facility and the transportation of the treated liquid to the forest.

As the PMU will have established close working relationships with the tanneries there is a case for it being appointed by the Robikki Industrial Park Development Company to manage the Tanneries Cluster part of the Park on its behalf. The same could also apply to the management of the Leather Technology Centre / Tanneries Cluster Development Centre. The potential range of activities that could be undertaken by the second stage PMU are indicated in the diagram overleaf and could include:

- Managing a Tanneries Business Development Fund, which could assist with funding extensions to the new tanneries and the establishment of additional new tanneries. This fund could be established out of the MRTCI Funding Package on the basis of a revolving loan facility.
- The PMU could act in an intermediary role between the Robikki Industrial Park Development Company and the new tannery businesses to hold units on behalf of the owners of the new tanneries until they are ready to occupy their buildings. There should also be an option to rent tannery buildings and processing facilities which could be managed by the second stage PMU.
- The previous section raised the issue of how the non-tannery businesses are to become involved in the new Tanneries Cluster. The business activities that will still be required after the relocation include: Chemical Stores; Leather Stores; and Maintenance and Repair Workshops. The facilities that will be constructed for these business activities need to be either sold, or rented, to the new owners.

Stage 2 - Robikki Tanneries Cluster Development Agency PMU



- One of the roles of the Robikki Industrial Park will be to attract international interest into businesses located within the park and as an inward investment location. The second stage PMU could undertake search and promotion activities on behalf of individual tanneries to identify joint venture or strategic alliance partners. Similar international promotion activities could be undertaken to attract international investments into the Tanneries Cluster.
- Delivery of the continuing business development activities, as indicated above.
- Management of the Tanneries Cluster part of the Robikki Industrial Park as indicated above.
- Management of the Leather Technology Centre, see above.
- Management of the wastewater treatment facility, see above.

As already indicated it is too early to indicate which of the above will be covered by the second stage PMU, with the list presented as it demonstrates the options.

Offices and Facilities

The first stage PMU will operate from dedicated offices from as close as possible to Magra El-Eion. There are a number of new buildings that are currently being completed on the Cornish which are close to Magra El-Eion, which could provide suitable offices. During the first stage there is requirement to be able to deliver the skill up-grading training, to crust, to the tanneries located within Magra El-Eion. There are two options for delivering this training:

- Renovate the former training centre building to be provide a suitable classroom.
- Use the facilities of an existing tannery within Magra El-Eion that can produce good quality crust.

For the second stage, the PMU offices at Robikki should be included within the Leather Technology Centre / Tanneries Cluster Development Centre. During the relocation process the PMU will have offices both at Magra El-Eion and the Robikki.

Tanneries Meetings

Suitable premises need to be found to accommodate meetings of the Tanneries Representation Sub-groups, the Overall Tanneries Representation Group, and to hold public meetings of large numbers of tanneries. The public meetings are required to select the two sets of representatives, hold briefing sessions with of all tanneries, and to obtain their feedback on proposals.

Cost Structure

It is possible to be relatively accurate in preparing a costing for stage 1 of the PMU, but it is only possible to provide an overall estimate for stage 2, due to uncertainty over the range of activities to be delivered and how these will relate to the Robikki Industrial Park Development Company.

Project Management Unit – Tanneries Project – Stage 1 Up To Relocation

In the following sections it is proposed that the relocation could occur at the beginning of 2008, but this represents a fast track to implementing the MRTCI that may be found to be unrealistic. The first stage costing, see table overleaf for a budget break-down, have been prepared based on a stage 1 period of 20 months, which will need to be extended if the period up to relocation is longer.

The second stage PMU will require to exist for 18 months after the tanneries relocating to the new Robikki Tanneries Cluster. It is estimated that after the relocation it will cost EGP 2,400,000 a year to run the PMU at Robikki, but it is emphasised that this is very much an estimate.

	FIRST YEAR 12 MONTHS	SECOND YEAR 8 MONTHS	SECOND YEAR 4 MONTHS	TOTAL SECOND YEAR 12 MONTHS	THIRD YEAR 12 MONTHS	FOURTH YEAR 2 MONTHS
	5,156,612	3,268,464	800,000	4,068,464	2,400,000	400,000

The total cost of operating the PMU over a period of 3 years and two months is estimated to be EBP 12,025,076.

Budget Line	FIRST YEAR		SECOND YEAR – 8 MONTHS	
	Monthly Cost In EGP	Annual Cost In EGP		
Rent	5,000	60,000	5,500	44,000
Insurance	208.33	2,500	208.33	1,667
Utilities	600	7,200	600	4,800
Telephones (land)	1,000	12,000	1,000	8,000
Mobiles (6)	1,800	21,600	1,800	14,400
Cleaning / Security	600	7,200	600	4,800
Transport (2 cars + drivers)	7,000	84,000	7,000	56,000
Stationery	5,000	60,000	5,000	40,000
Equipment (rented)	2,000	24,000	2,000	16,000
Total		278,500		189,667
Salaries ² + 3:				
• Co-ordinator	157,080	942,480	157,080	628,320
• PPP Specialist	157,080	314,160	157,080	78,540
• Business Dev.	157,080	942,480	157,080	628,320
• Communications	56,100	336,600	56,100	224,400
• Technologist	42,840	257,040	42,840	171,360
• Training Admin.	5,000	60,000	5,000	40,000
• Technical Engr	5,000	60,000	5,000	40,000
• Economist / Acc	5,000	60,000	5,000	40,000
• Liaison Off. (2)	7,000	84,000	7,000	56,000
• Team Secretary	2,500	30,000	2,500	20,000
• Tax @ 20%	51,446	617,352		385,388
Total Salaries		3,704,112		2,312,328
Professional Fees:				
• GPS, etc	83,333	1,000,000	50,000	400,000
• Financial training	5,833	70,000		-
• Accountant (Int.)	2,000	24,000	2,000	16,000
• Audit (Int.)	1,667	20,000	1,667	13,336
• Legal (Proj.)	5,000	60,000	5,000	40,000
Total Professional		1,174,000		469,336
Total		5,156,612		2,971,331
10% Contingency		515,661		297,133
Overall Total		5,672,273		3,268,464

¹ Exchange rate EGP 6.8 : Euro 1.0

² Manager € 1,050 x 22 days
Communications € 750 x 11 days
Technologist € 1,050 x 6 days

³ Manager / Communications / Technologist – International
Training Administration / Technical Engineer / Economist / Team Secretary - Egyptian

6. RAW MATERIAL SUPPLY AND PRODUCTION CAPACITY

Basis of Calculating Domestic Supply

The basis of calculating domestic raw material supply (the availability of raw hides and skins) are statistics of the number of animals slaughtered in abattoirs, by Governorate, based on figures compiled by the Veterinary Department, of the Ministry of Agriculture. The figures include animals that are imported live and slaughtered in Egypt. It is acknowledged that only a proportion of animals, in Egypt, are slaughtered in abattoirs with the remainder slaughtered in villages and on farms. We have used the following assumptions for the total number of animals slaughtered in Egypt, by animal category:

- Cows, 50% in abattoirs; 50% in villages and farms.
- Buffalos 50% in abattoirs; 50% in villages and farms.
- Small bovine (fattening cattle) 40% in abattoirs; 60% in villages and farms.
- Camels 40% in abattoirs; 60% in villages and farms.
- Sheep 20% in abattoirs; 80% in villages and farms.
- Goats 20% in abattoirs; 80% in villages and farms.

To calculate the level of raw material supply we have applied the following average areas for each type of hide and skin:

- Cows 40 sq ft.
- Buffalos 42 sq ft.
- Small bovines 13 sq ft.
- Camels 44 sq ft.
- Sheep 8 sq ft.
- Goats 4 sq ft.

The period of data presentation is 1997 to 2004, inclusive, as we have not been able to obtain data for 2005.

Animals Slaughtered

The base data of number of animals slaughtered, by year, and by type is:

	Number Animals							
	1997	1998	1999	2000	2001	2002	2003	2004
Cows	640,878	730,524	741,772	795,815	756,958	775,280	873,919	838,936
Buffaloes	384,266	360,867	295,800	300,291	347,603	393,031	433,256	396,552
Small B.	488,074	413,623	305,670	296,807	315,526	346,147	379,971	340,249
Camels	96,790	116,528	123,593	108,704	116,491	102,643	88,232	78,505
Sheep	528,672	488,717	465,180	425,532	416,401	413,820	397,994	348,537
Goats	34,823	34,020	25,085	21,888	21,744	18,713	18,137	15,539
Total	2,173,503	2,144,279	1,957,100	1,949,037	1,974,723	2,049,634	2,190,505	2,018,318

Source: National Information Centre

The total number of animals slaughtered in Egypt's abattoirs fell from a high of 2.174 mn in 1997 to a low of 1.949 mn in 2000, representing a decline of 10%. This was followed by three years of increases, from 1.975 mn in 2001, to 2.190 mn in 2003. The total for 2003 was marginally higher than total for 1997, but over an eight year period the total had been lower than the 1997 for seven years. In 2003 total was only 17,002 higher than 1997. The results for 2004 indicate the total declined again to 2.018 mn, which is lower than 2002, 2003 and 2004.

The total figures mask some significant changes between the animal categories. The number of cows being slaughtered has increased substantially, by 30.9% between 1997 and 2004. The number of buffaloes being slaughtered has increased over the same period, but by a lower margin of 3%. All other animal categories have experienced declines in the number of animals being slaughtered, with the most significant declines being for sheep at 34.1% and 30.3% for small bovines.

Domestic Raw Material Supply

The level of raw material supply between 1997 and 2004 has been calculated by applying the above assumptions to the number of animals being slaughtered by animal type. The level of annual raw material supply has been:

Mn Sq Ft

	1997	1998	1999	2000	2001	2002	2003	2004
Cows	51.2	58.4	59.4	63.6	60.6	62.0	70.0	67.2
Buffalos	32.2	30.2	24.8	25.2	29.2	33.0	36.4	33.4
Small B.	15.8	13.4	13.5	12.0	12.8	11.2	12.2	11.0
Camels	10.8	12.8	10.0	9.8	10.2	11.2	9.8	8.5
Sheep	21.0	19.5	18.5	17.0	16.5	16.5	16.0	14.0
Goats	0.7	0.7	0.5	0.4	0.4	0.4	0.4	0.3
Total	131.7	135.0	126.7	128.0	129.7	134.3	144.8	134.4

Source: National Information Centre

It can be seen from the above table that the total domestic raw material supply during 2004 was 134.4 mn sq ft, which was only slightly higher than the 1997 level. After 1997 the level of increased to 135 mn sq ft in 1998, but there followed a period of four years before this level was achieved again in 2002. There had been a consistent period of increasing supply from the low of 126.7 mn sq ft in 1999 to a high of 144.8 mn sq ft in 2003. During this period there was an average annual increase of 2.9% in domestic raw material supply. The period of growth was broken during 2004, when there was a significant decrease of 10.4 mn sq ft of raw material availability. Based on the 2004 result, raw material supply had gone backwards to the level achieved in 1998.

The most significant conclusion from the above figures is that, based on the raw material supply results between 1999 and 2003 there would be annual projections of increasing raw material supply of 2.9%, with a supply of 176.9 mn sq ft achieved by 2010.

The 2004 result provides a shock for projections of continuing increases in domestic supply. After five years of continuous increases in domestic supply, a loss of 10.4 mn sq ft, 7.2%, in one year will have had a significant impact on Egypt's Tanning Sector. It is unfortunate that the figures for 2005 are not available as they are important to determine if 2004 was a "one-off" and there has been a return to the previous growth, or whether 2004 represents a "watershed" and there should not be any further expectations of growth in domestic raw material supply.

Interview Results

One of the outcomes of the interviews undertaken with tannery owners is that a number of the key players in Magra El-Eion have started to import raw hides and skins during the last 12 months. This provides anecdotal evidence that the tightening of domestic raw material supply has continued into 2005 and 2006.

Imports of Raw Material

Import data of raw hides and skins is presented in value and weight, which do not correspond to the above calculations in sq ft. We have applied the following assumptions of average imported cost per hides and skins to convert the value figures into the number of imported hides and skins:

- Cow and buffalo hides - EGP 250.
- Sheep skins - EGP 40.
- Goat skins – EGP 30.

The resulting number of hides and skins can be converted into sq ft by applying the above assumptions. The resulting levels of imported raw material supply for the years 1999 to 2003 are:

	In Mn Sq Ft				
	1999	2000	2001	2002	2003
Cows	0.018	0.390	0.725	0.653	0.196
Buffalos					
Small B.	-	-	-	-	-
Camels	-	-	-	-	-
Sheep	0.010	0.225	0.102	-	-
Goats	-	-	-	-	-
Total	0.028	0.615	0.827	0.663	0.196

Source: National Information Centre

The figures that we have obtained for 2004 and 2005 are also from the National Information Centre, but now include numbers of hides and skins imported.

As the results for these two years are on a different basis they are presented in a separate table. It should be noted that the results for 2005 are up to, and including September, and we provide a full year equivalent figure based on projecting the nine month results for the full twelve month period.

	In Mn Sq Ft		
	2004	2005	2005
Bovine	2.284	9.211	12.282
Sheep / Lambs	0.198	0.015	0.020
Goats	0.128	0.091	0.119
Total	2.610	9.317	12.421

Source: National Information Centre

Total Available Supply

The total annual available supply of raw material since 1999 is indicated in the following table.

In Mn Sq Ft

	1999	2000	2001	2002	2003	2004	2005
Domestic	126.7	128.0	129.7	134.3	144.8	134.4	N/a
Imports	0.028	0.615	0.827	0.663	0.196	2.610	12.421
Total	126.728	128.615	130.527	134.963	144.996	137.010	N/a

Source: National Information Centre

During the period when domestic raw material supply was increasing at average of 2.9% a year, the level of imports were low. 2003 was the year with the greatest increase in domestic raw material supply, which also coincided with the lowest level of imports since 1999. During 2004 the reduction in domestic supply coincided with a substantial increase in the level of imports. During 2005 there has been a further significant increase in imports to 12.4 mn sq ft, which suggests there may have been a further decline in domestic supply. Until domestic supply figures are available for 2005 we suggest the level of availability of raw material should be taken to be 135.0 mn sq ft. This may be conservative, but it is better to have to increase the level of availability than to reduce the level.

Production Capacity

Our understanding of the level of production capacity and actual production in Egypt, outside Magra El-Eion, and the status of the production facilities are as in the table overleaf.

The table indicates that the present level of raw material supply that can be applied to the Robikki Tanneries Cluster in 51.4 – 60.4 mn sq ft.

Such figures in raw material supply provide an encouraging background for verifying the minimum basic level of production capacity to be envisaged at Robikki in order to reach the break even point of the new district, that according to the financial model made between our outputs is reached at the tune of 50 mn/sq ft of annual production.

Our plan is on the basis that we are not aware of any plans to modernise the facilities at Alexandria, or under the “other” category, as well as we do not take into account possible future expansion of tanned leather production due to an increase of imported raw material and, in order to avoid any minimum risk of failure of the implementation of the new Robikki district for lack of “critical mass”, we suggest the level of availability could be determined slightly above the higher of the two figures.

Ideal Tannery Unit

The earlier ASSOMAC study (1997-98) indicated the ideal size of tannery unit to be competitive will have annual production capacity of 7.8 mn sq ft. We have not identified any reason to propose a different size of tannery, so we base our previews on this “ideal tannery” model.

Number of Tanneries

We propose that eight tanneries of this size could be established at the Robikki Tanneries Cluster. This level of provision can be increased based on having answers to the following points:

- The level of domestically-sourced raw material during 2005 and its projected annual level up to 2010.
- The continuing experience of importing raw material and the potential for increasing imports above the level achieved during 2005.

	Annual Production Capacity	Average Annual Production	Comments	In Mn Sq Ft Allocation Of Raw Material Of Overall Availability
Alexandria	33.0	25.0	Most of the tanneries operate in the same conditions as at Magra El-Eion and the complete production capacity needs to be modernised. One alternative is to establish a second Tanneries Cluster near Alexandria.	20.0
Qesna (Bill Calor)	24.0 – 33.0	24.0 – 33.0	We have received conflicting statements on the level of production capacity at this tannery which is why two figures are provided. We understand this tannery is operating at full capacity and is very active in the domestic market purchasing hides.	24.0 – 33.0
Techno	15.6	-	This tannery went bankrupt a few years after opening and is owned by a bank. The facilities are only 12 years old and can be refurbished to product high quality leather. Although this tannery is currently not operating it represents one of the few modern facilities in Egypt and a way should be found to bring it back into full production.	15.6
Others	35.0	20.0	Much of this capacity is out-dated and will not be able to meet the required quality standards of crust and finished leather. A significant modernisation programme is required for these tanneries, which could be achieved by them being accommodated either within the Robikki Tanneries Cluster, or the Alexandria Cluster if this is established. As of now it is assumed that these tanneries remain “as is” as there has not been any contact with them. Without modernisation many of these tanneries will have to shut if they are to comply with Egypt’s environmental regulations. As these tanneries are scattered around Egypt it will not make commercial sense to provide each with a new wastewater treatment facility and therefore there should be pressure applied for these tanneries to relocate to where the required wastewater treatment facilities are available.	15.0
Total	107.6 – 116.6	69.0 – 78.0		74.6 – 83.6
Overall Availability				135.0
Availability Allocated to Robikki Tanneries Cluster				51.4 - 60.4

- Confirming the annual production capacity at Quesna.
- A decision being reached on the modernisation of the tanneries at Alexandria.
- Decisions being reached on the modernisation of the tanneries in the “other” category.

Including 8 of the ideal size of tannery under the MRTCI should be viewed as a starting-point, with the layout of the Tanneries Cluster having the potential to accommodate additional tanneries based on the outcome of assessing the above points. The PMU should keep the situation relating to the above points under continuous review to determine if there is sufficient evidence to increase the number of tanneries. This could happen over the next few months, before the start of any construction work.

7. RESULTS OF SURVEY OF MAGRA EL-EION

The tanneries relocation project is a sub-set of much larger projects relating to the redevelopment of Magra El-Eion and the establishment of an Industrial Park at the Robikki area. On its own, the tanneries relocation project lacks scale and impact to make either project work, but it can play a useful role for both kick-starting wider activities and to act as a pilot for establishing private-public partnerships to develop Industrial Parks.

Magra El-Eion has the main concentration of tanning and related activities in Egypt. Traditional techniques to processing the hides and skins are used, with no treatment of the effluents which are discharged directly into Cairo's sewers. This causes a serious health hazard to the city's inhabitants, in particular, from the chrome salts. The businesses operate in highly cramped conditions which result in many production inefficiencies. Through undertaking interviews with tannery owners it is clear that those tanneries which are producing wet blue are highly polluting the area...

A detailed survey of establishments within the Magra El-Eion has indicated the following break-down:

BUSINESS TYPE	TOTAL	% BREAK-DOWN
Tanneries	310	41.1
Glue factories	83	11.0
Leather stores	74	9.8
Chemical stores	70	9.3
Shops / stores ¹	51	6.8
Cafeteria / kebab	48	6.4
Workshops	27	3.6
Houses	21	2.8
Mosque	7	0.9
Intestine factory	4	0.5
Vacant	3	0.4
Shoe / sole factory	2	0.3
Dye house	1	0.1
Salt store	1	0.1
Coke processing	1	0.1
Marble factory	1	0.1
Organic fertilizers	1	0.1
Oil factory	1	0.1
Others	49	6.5
Total	755	100.0

¹ Includes kiosks

The Magra El-Eion area is predominantly commercial, with only a few housing units. The commercial activities are divided into manufacturing and related

support services, such as: stores; cafeterias; repair workshops. The manufacturing activities are almost all related to by-products of slaughtering animals, such as: hides and skins; glue; intestines. The main manufacturing activity is tanning hides and skins into leather, with 310 tanning establishments identified, accounting for 41% of all of the establishments in the area. The next most significant manufacturing activity is processing the shavings from the tanning process into industrial glue, with 83 establishments identified (11% of the total). Other manufacturing activities include: 4 intestine factories; 2 sole / shoe factories; 1 dye house; 1 coke processing facility; 1 marble factory; and 1 manufacturer of organic fertilisers.

8. INITIAL MRTCI SPECIFICATION AND IMPLEMENTATION

Key Elements

There are five key elements to the initial MRTCI specification and implementation:

- The approach to extracting value from the redevelopment of the Magra El-Eion area to offer financial incentives to the existing businesses that currently occupy the area to agree to leave voluntarily.
- Other approaches that can be applied to raising finance from commercial sources to fund the implementation of all aspects of the MRTCI.
- The involvement of the public sector in putting together the Funding Package. In this respect it should be noted that the Government of Egypt is willing to transfer the ownership of the land at Robikki at no cost to the Robikki Industrial Park Development Company. The ownership of the land that is owned by the Government of Egypt will be transferred to the Magra El-Eion Redevelopment Company in exchange for legally binding commitments to undertake “public good” elements of the redevelopment at no cost, and to have a shareholding in the Company. The way this transfer is structured and implemented will be negotiated separately from progressing the implementation of the MRTCI.
- Funding that has been, and is still being, made available through the Italian – Egyptian Debt Swap Committee to finance the various infrastructure elements of the site at Robikki. It should be noted that until recently this funding was directed only at the establishment of the Tanneries Cluster at Robikki, but the investment in infrastructure will now be available to be used by other industrial activities to be accommodated within the Industrial Park.
- Establishment of a Leather Technology Centre for the new Tanneries Cluster, but also to support the wider Leather District at Robikki.
- Establishment of the wastewater treatment facility for treating the effluent from the tanneries.
- Establishment of the forest to take the treated effluent as the output from the wastewater treatment facility.
- Provision of employee housing and support facilities.
- The initial specification of the Robikki Tanneries Cluster.

Extracting Value of Magra El-Eion Redevelopment

The bidders for the position of Robikki Industrial Park Development Company need to understand that one of the ways of generating funding for the implementation of the MRTCI is to realise part of the redevelopment value of the Magra El-Eion site, before the redevelopment works start. Proposals must be submitted for how finance can be made available to fund the establishment of the Tanneries Cluster at Robikki, based on the future increase of value of the site, when all of the existing activities have been closed and it is available for redevelopment. In particular, bidders must present proposals in three specific areas:

- Funding the purchase costs of the land that is legally held by the owners of businesses within Magra El-Eion. It is estimated that between 10 and 15% of the area of Magra El-Eion (estimated to be 55 feddans) is held on this basis.
- How financial incentives can be offered to tanneries, and other businesses, that do not have legal documents indicating ownership of the land they occupy, with the incentives to cover the following points:
 - The businesses formally give-up any potential claim to ownership of the land and confirm that it is currently owned by the Government of Egypt, represented by MFTI.
 - The businesses commit themselves to leave the area within a specific timescale, and indicate that if they fail to keep to this timescale they will forego their right to participate in the financial incentive and will be forcibly evicted from their current premises.
- The financial incentives need to be offered in two ways:
 - For businesses that decide they want to participate in the MRTCI; access to the complete Funding Package that will be put together to assist the relocation and establishment of the new tanneries.
 - For businesses that decide they do not want to participate in the MRTCI, in other words they do not want to relocate the Robikki Tanneries Cluster, an alternative financial incentive needs to be offered.

The proposals need to indicate clearly the split of responsibilities between the Steering Committee, represented by the PMU, and the bidder, on how the financial incentives are to be offered and how the threat, and imposition, of the forced evictions will operate.

Bidders also need to note that the structure and content of the financial incentives, and their role within the overall Funding Package will have to be agreed in advance by both the Overall Tanneries Representation Group, and the MRTCI Steering Committee.

Bidders may submit separate proposals for becoming the private developer partner to establish the Magra El-Eion Redevelopment Company and to describe how this project will be implemented and funded. If a bidder decides not to pursue this option it must state clearly how the process of extracting value from the site, in advance of its redevelopment, will be achieved.

Italian Funding

An agreement was signed between the Italian Government, represented by the Italian Embassy in Cairo, and MFTI, to cover the following:

- A total of EGP 162 mn was allocated to undertake specific infrastructure works to support the establishment of the new Tanneries Cluster at Robikki. This funding is split EGP 159 mn for capital works and EGP 3 mn for technical assistance.
- The lead role in progressing the new Tanneries Cluster at Robikki had been previously allocated to IMC (Technical) by the former Ministry of Industry and Technology, as explained in section 1, and this situation was retained from the start of implementing the agreement.
- IMC (Technical) had been working on the specification of the project for many years based on the content of the ASSOMAC report from 1997/98, again see section 1 for explanation. This project was based on three stages of establishing the new Tanneries Cluster, which would cover an area of 2.2 mn m² and have total annual production capacity, upon completion of all three stages, of 241.8 mn sq ft of processed leather.
- The budget of EGP 159 mn for capital works was set based on the infrastructure requirements of the original project specification made in 1997/98.
- As part of the agreement between the two parties most of the EGP 3 mn technical assistance budget was allocated to fund a contract that was issued between IMC (Technical) and ASSOMAC, for the latter to provide ongoing technical support to up-date and finalise the detailed project specification. It needs to be noted that ASSOMAC also had a role to advise the Italian side on the progress of the project. Based on this working relationship concerns were expressed on the scale of the project in terms of its total land area and planned overall annual production capacity.
- Undertaking the study associated with this report was also funded through the EGP 3 mn technical assistance budget.
- IMC (Technical) issued at least two tenders, under Government of Egypt procedures, for construction works at Robikki. One of these contracts

covered the supply of utilities to the perimeter of the allocated land area. The second contract was issued to construct infrastructure within the allocated site. It is up to bidders to assess the current stage of progress of both of these contracts and to determine how the works will support their plans for the establishment of the overall Robikki Industrial Park.

- It is our understanding that the complete EGP 162 mn is allocated to activities relating to the implementation of the MRTCI and there are not any spare funds to be accessed by the bidders, but it is up to bidders to check this point with IMC (Technical).
- The background to the Italian involvement being extended from supporting the establishment of the new Robikki Tanneries Cluster to supporting the establishment of the Robikki Industrial Park has been explained in section 1.
- The funding of the infrastructure works has been by way of a grant from the Italian Government to the Government of Egypt. The ownership of the completed infrastructure, that is within the site of the Robikki Industrial Park, will be handed-over to the party that establishes the Robikki Industrial Park Development Company, without any financial consideration being paid by the Company, or the Government of Egypt requiring any financial stake in the Company. The Italian Government reserves the right to impose conditions on the future use of the infrastructure through the Steering Committee. The funding of both the external and internal infrastructure by the Italian Government is to be included in the PPP Funding Package and the Italian involvement in the establishment of the Robikki Industrial park must be acknowledged by the Robikki Industrial Park Development Company.

Leather Technology Centre (LTC)

Under the original project specification a LTC was envisaged to be established as a core activity of the overall new Leather District. This element was adopted by the former Ministry of Industry and Technology and inherited by MFTI. Based on the original specification funding of EGP 35 mn was required. Specific recommendations on how the LTC should be progressed in relation to the MRTCI and the PPP Funding Package are provided in section 5, and will be considered by the Steering Committee, see next section.

Through this study ASSOMAC has prepared a detailed specification of the machinery and equipment that is to be installed in the LTC. These machineries will be necessary in order to be able to set up the appropriate training to upgrade the technology and to achieve the necessary know how to improve the working process from wet blue to finished leather through the leather tanning value chain.

This is covered by a separate report that can be made available to interested parties upon request.

Training

Training is needed to improve the skills of the labour force in order to achieve the target to upgrade the production from wet blue to quality finished leather, as well as re-training is needed to relocate the unskilled workers that will not be re-employed for unskilled tasks after the relocation of the district to Robikki. A considerable number of unskilled workers is currently employed in Magra El Eion to manually move the raw hides into the tanneries, move them around the tanneries and to manually load the containers. It has been indicated on a number of occasions that these employees will not be required after the relocation as this activity will be done by forklift truck. It is envisaged that after the transfer about 5.000 people will need to be relocated or re employed with higher skills level for upgrading the value chain from wet blue to finished leather.

Wastewater Treatment Facility

ASSOMAC has undertaken detailed design work in relation to the construction of the wastewater treatment facility, with this taking into account the reduced scale of the new Tanneries Cluster and technological advancements since the original specification. The budget for constructing the facility has been set at EGP 55 mn and this sum is ring-fenced within the overall allocation funds by the Italian Government. It should be noted that ASSOMAC will act as project managers for this element of the overall project and in this capacity will be responsible for procurement. The selected bidder to establish the Robikki Industrial Park Development Company will have to enter into a separate agreement with ASSOMAC, as project managers, on how the construction works are to be managed.

Forest

The original approach included the establishment of a forest in the area of Badr City to provide an area for depositing the treated effluent as the output from the wastewater treatment facility. The establishment of the forest was allocated to Badr City Council to be implemented, but as of now no progress has been made to plant the trees. As it takes a minimum of four years growth before the trees are sufficiently developed to cope with the treated wastewater it will be mid 2010, at the earliest, before the forest can operate to the approach that was originally planned. Bidders must recommend alternatives to dealing with the output treated wastewater, in an environmentally acceptable way, until the forest is ready.

Employee Housing

A key element of the MRTCI will be to encourage as many employees of the new tanneries as possible to relocate with their exiting tanneries to be housed at Robikki, at an appropriate distance from the tanneries. Badr City Council has offered existing housing units on their standard terms, but there is interest in receiving alternative proposals from bidders on how new housing and support facilities could be made available through the MRTCI. In this context bidders may team-up with Egyptian or international parties that specialise in the provision of social housing. It would be particularly interesting to receive proposals on how a rent – equity system could be introduced whereby employees own their flat after a minimum number of years of dedicating themselves to their employer.

It is estimated that the new Robikki Tanneries Cluster will employ 1,200 persons (150 at each “ideal” size tannery unit), which will require 1,200 housing units, each of 75 m².

Initial Project Specification

The key features of the initial project specification are:

- Eight tanneries are to be constructed up to the point where all finishing works have been completed and the buildings are ready to be occupied by the new tannery owners to start installing their equipment. The Robikki Industrial Park Development Company will not have any responsibility for equipment installation, unless this is agreed on a case-by-case basis with the owners of the new tanneries.
- Each of the eight tanneries will have annual production capacity of 7.8 mn sq ft, will have buildings with a land area of 6,480 m² and will be accommodated within an overall land site of 14,400 m².
- The bidder must indicate how additional tanneries can be accommodated within the Robikki Tanneries Cluster, based on the outcome of the ongoing review activity described in section 6. This flexibility must be available at least up to the end of 2010.
- A technical specification of a standard integrated tannery unit will be provided to each bidder, who will be invited to recommend ways of reducing construction costs. At the time of preparing this report four, out of the eight, tanneries will be single integrated units that will be allocated to the Leading Tanneries Representation Sub-group.

- The other four tannery units will be established as a series of businesses, each covering a different stage in the production process. ASSOMAC has already prepared designs for these tannery units, which will be made available to each bidder.
- It should be noted that the above 50 : 50 allocation of the tannery units between the two tannery representation sub-groups may change based on consultations between the two groups and the number of tanneries from each group that decide not to participate in the MRTCI.

Bidder Responsibilities

Bidders must provide detailed costings for:

- The completion of any infrastructure requirements that are not covered by the contracts that have been, or will be, issued by IMC (Technical).
- The construction of the eight tannery units, split into the two categories as indicated above.
- The construction cost per m² of workshops and stores (chemical and leather) and other supporting services that need to be included within the new Robikki Tanneries Cluster.
- The construction cost of the LTC.
- Presenting rental options for both categories of tanneries and the workshops / stores, on a cost per month per m².

In addition bidders must provide specific recommendations on how additional tanneries will be accommodated and how land will be set aside for additional by-product processing facilities.

9. PPP FUNDING PACKAGE

Current Status

It is important to note that a number of elements of the PPP Funding Package cannot be finalised until the bidder to become the Robikki Industrial Park Development Company has been selected and detailed negotiations have been finalised. The selection process and final negotiations will address the following points:

- The construction costs for completing each tannery unit, taking into account the two categories.
- The construction costs of completing the infrastructure that is not covered by the contracts that have been, or will be, issued by IMC (Technical).
- The level of funding that can be extracted from the Magra El-Eion redevelopment project, and its terms and conditions.
- The level of funding the bidder can allocated from commercial sources.

The figures provided in this section should be viewed as providing estimates to start a dialogue on how the PPP Funding Package can be structured and will operate. It needs to be recognised that a key assumption is that there will only be 8 tanneries during the initial construction stage.

Overall Funding Requirement

The following estimates of overall costs are:

- Value of land at Robikki which has a standard rate of EGP 150 unserviced. Each tannery requires 14,400 m²; assume same area required again for all infrastructure and support activities, including possibly housing; each tannery requires land area of 28,800 m². 8 tanneries with total land requirement of 230,400 m², with a value of EGP 34.56 mn. It is interesting to note that this is one tenth of the area that was originally allocated. The amount will be put at cost and the revenue will be endorsed for skill training and re-training the labours.
- Infrastructure works, which must be about EGP 93 mn , calculated by deducting the EGP 66 mn originally required for the wastewater treatment facility from the EGP 159 mn.
- Construction cost of the tannery units to cost about EGP 1,200; selected between 800 and 1.600 EGP per m², depending on the source and the

quality of level of finishing. At 6,480 m² each tannery will cost EGP 7.776 mn to construct. With 8 tanneries the total cost will be EGP 62.208.

- Construction costs of workshops and stores at an average of EGP 600 per m², with 10,000 m² required, with a total cost of EGP 6.0 mn.
- Equipment per tannery with a cost of EGP 15.312 – this is taken from our “outputs” report where we indicate \$ 2.64 mn per tannery – with 8 tanneries total cost of EGP 122.496.
- Leather Technology Centre which was budgeted to cost EGP 35, but this may be lower due to smaller size of the cluster.
- Equipment for the LTC, re named TSC (Technology Service Centre) as basic platform to be able to carry out the necessary training
- Wastewater treatment facility at EGP 57 mn, which is a figure with high level of certainty.
- Housing which will cost maximum EGP 1,400 per m² to construct and complete; with 75 m² per unit gives cost of EGP 105,000 per unit; with 12,00 units total cost of EGP 126 mn.
- Forest which has an area of 5. feddans, 21.000 m² with an opportunity cost value of EGP 600,000 per feddan, and a development cost of EGP 5,000 per feddan, giving total cost of EGP 25,000
- Technical assistance of EGP .28 mn, already spent, plus 0.2 to be allocated for GPS survey, within the PMU activities.
- PMU cost as per section 5.
- Technical training EGP 34,56, including: (a) technical training, with a value of EGP 0.8 mn to be delivered before relocating; (b) training for labour, re training for the skilled that will be employed at Robikki (1.200 to 2.400 people) and the inside labour that will be retrained for new skills for finished leather or will be relocated training (up to About 5.000 people), with a value of EGP 33,76 mn to be delivered before, during and after the relocating.
- Budget of EGP 5.6 mn set-up be IMC (Development) to fund business development activities with the tanneries.
- The tanneries EGP 0.84 mn cost share associated with IMC (Development's) budget allocation.

Based on the above estimates the following summary and comments can be provided:

In EGP mns

Estimated

ITEM	COST EGP	COMMENTS
<i>CAPITAL COST:</i>		
Land	34.56	Included at no cost
Infrastructure	93.0	Italian funding.
Construction of tanneries	62.208	Included at cost
Workshops / stores	6.0	Included at cost
Tanneries equipment	122.496	Included at cost
LTC	35.0	To be reviewed
Technical equipment of LTC	9.0	Italian funding
Wastewater treatment	57.0	Italian funding
Housing	126.0	Specific proposals required
Forest	0.025	Need costing
<i>Total Capital</i>	<i>545.29</i>	
<i>OPERATING COSTS:</i>		
Technical assistance budget	2.8	Italian funding
PMU Costs	11.825	IMC (Development)
PMU (GPS survey) cost	0.2	Italian funding
8 tanneries with Business Develop budgets of € 100,000 each	5.6	IMC (Development)
Tannery cost share	0.84	Tanneries
Training and inside labour Relocation	34.56	Cost endorsed from land
<i>Total Operating Costs</i>	<i>55.83</i>	
Total Overall Costs	601.11	

(Not confirmed funding are in red)

Confirmed Funding

Our understanding of the confirmed funding out of the above are:

Capital Costs:

- Land at EGP 34.56 mn, to be provided by the Government of Egypt: this budget could be included at cost and the returns could be endorsed for training and re employment
- Infrastructure at EGP 93.0 mn, being funded by Italian Government.

- LTC infrastructures at EGP 35 mn (to be revised), funded by Government of Egypt
- Equipment for the LTC at EGP 9.0 mn, being funded by Italian Government
- Wastewater treatment facility, at EGP 57.0 mn to be funded by Italian Government.

Operating Costs:

- Technical assistance of EGP 3 mn, funded by Italian Government.
- Budget of EGP 5.6 mn set-up by IMC (Development) to fund business development activities with the tanneries.
- The tanneries EGP 0.84 mn cost share associated with IMC (Development's) budget allocation.

The total of confirmed funding is EGP 231.56 mn, which represents 38.6% of the total funding requirement.

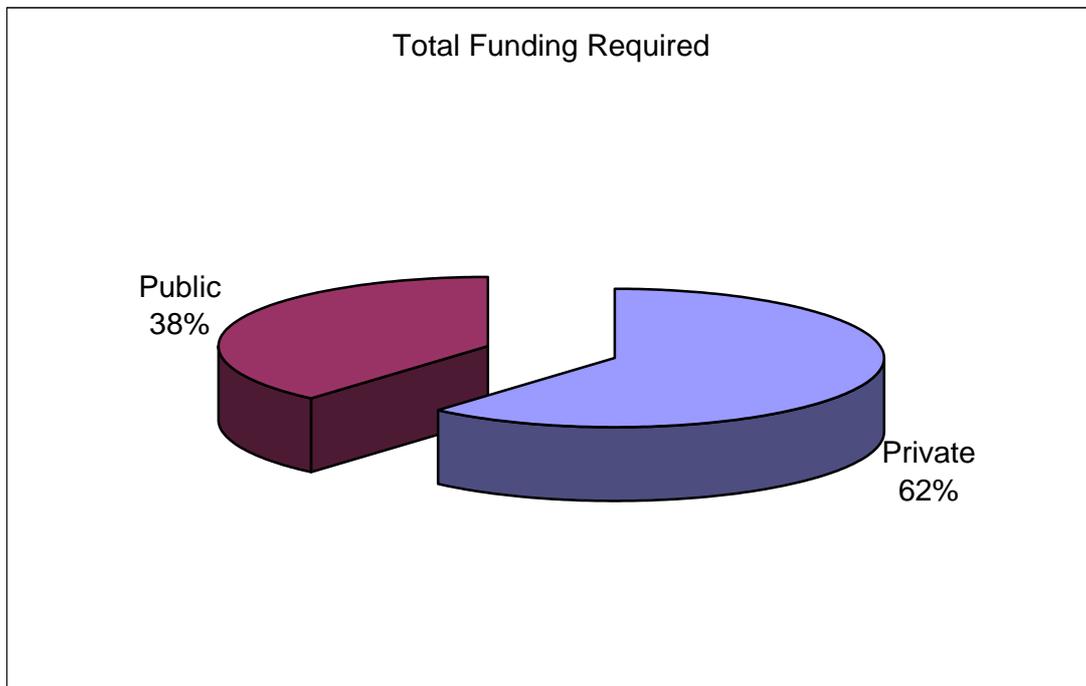
EIB Loan Fund

It is recommended that the EIB should be approached to set-up a Loan Fund that will operate alongside the PPP Funding Package, which could have a total value of Euro 20 mn (EGP 140 mn). There is an existing Loan Fund operating in Syria on which the MRTCI scheme could be modeled. The basic interest rate is 4.5 %, with 3% added for the issuing banks. Repayment periods are 6 – 8 years, with a one year grace period. Such loans could be directed at equipment purchases, which have been estimated at EGP 122.5 mn.

Outline PPP Funding Package

An outline PPP Funding Package could be as indicated in the table overleaf. Under the proposed approach to structuring the PPP Funding Package the private sector element would be 62%, with the public sector share being 38%.

	AMOUNT	PRIVATE	PUBLIC
Confirmed	231.56		231.56
EIB Loan Fund	122.5	122.5	
Magra El-Eion Redevelopment / Commercial Funding Through Development Company	247.05	247.5	
Total Funding Required	601.1	370	231.6
% Break-down			



10. NEXT STEPS

Steering Committee

The Steering Committee needs to consider, and reach decisions, on the following points, which should become agenda items for its first meeting:

- React to the overall MRTCI framework as described in section 4, including each of the elements of the structure. In particular, agree the: structure of the Overall Tanneries Representation Group, and its two Sub-groups; composition of the Stakeholders Working Group; and the establishment of the PMU.
- Determine if the position of Robikki Industrial Park Development Company will be contracted just to implement the Tanneries Cluster, or to cover other industrial and clusters.
- Determine if the Funding Package that is to be established to finance the relocation of the tanneries from Magra El-Eion and the establishment of the new Robikki Tanneries Cluster is to be extended to cover non-tanning business activities that are currently located in Magra El-Eion. If it is agreed to open-up the Funding Package to all businesses, consideration also needs to be given to how these businesses will be represented within the overall MRTCI framework.
- Agree the boundaries of the Magra El-Eion site as having access to the Funding Package will be only available to tanneries, (or all businesses depending on the response to the last point), within its boundaries. This point will be progressed through reacting to the map of the area that has been prepared by IMC (Technical).
- Determine if the existing contracts to undertake the internal site infrastructure at Robikki can be transferred to the Robikki Industrial park Development Company.
- The current status of the Leather Technology Centre (LTC) or Technology Service Centre (TSC), including the funding that has been allocated to its establishment by MFTI, and any other part of the Government of Egypt. A response is required to the proposals presented in section 5 that; the LTC could be included within the PPP Funding Package and its construction undertaken by the Robikki Industrial Park Development Company; and its name should be changed to the Common Facilities Centre (CFC), the cluster development centre, with it incorporating the delivery of business development, the Business Resources Centre (BRC), training activities and in addition to meeting its technological development role, the Tanning Sharing Service (TSS).

- The proposal in the previous section that the initial eight tanneries should be ready to be handed-over to the new tannery owners by the end of 2007. This timescale has implications for stakeholders to be able to act intensively over the next 20 months to prepare the existing tanneries for their relocation to Robikki at the beginning of 2008.
- The Action Plan Report that is showed in Part II (Outputs) and that was prepare previously for the intermediate report contains proposed eligibility criteria for businesses in Magra El-Eion to participate in the project. These recommendations need to be considered and changed accordingly.

Stakeholders Working Group

A meeting of the Stakeholders Working Group should be held as soon as possible after the Steering Committee meeting to agree the involvement in, and contribution of, each party to implementing the MRTCI and setting-up the PPP Funding Package.

Overall Tanneries Representation Group

Following the Steering Group reaching decisions on the above points, and the Stakeholders Working Group, the next step should be to organise two public meetings where all tanneries are invited to attend based on the split recommended in section 4. These meetings should be held for three main purposes:

- Present the MRTCI and how it will be implemented.
- Obtain feedback from the tanneries.
- Select the representatives to sit on the respective Tanneries Representation Sub-groups.

Action Plan

A real Action Plan for the implementation of MRTCI can only be prepared based on the outcome of the above meetings. One of the most significant issues is whether having the eight tannery units completed by the end of 2007, is realistic and practical. However a detailed exercise action plan is depicted in Part II of this report.

**Project of relocation and
development of tanneries at Robikki
Area**

**TANNERIES RELOCATION
PROJECT - STUDY REPORT**

Outputs

Authors: Joint Technical Team (JTT)

Team of Experts of ASSOMAC SERVIZI SRL & IMC (tech.)

Principal: Cooperazione Italiana

Beneficiary: Ministry of Foreign Trade and Industry

May 2006



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Acronyms

ASSOMAC	Association of the Italian Leather and Leather Products Machines Manufacturers
BRC	Business Resources Centre
CETP	Common Effluent Treatment Plant
CFC	Common Facilities Centre
CLT	Chamber of the Leather Tanning
EEAA	Egyptian Environmental Affairs Agency
EGP	Egyptian Pound
EIB	European Investment Bank
EU	European Union
FAO	Food and Agriculture Organisation
GIDA	General Industrial Development Authority
GOE	Government of Egypt
GOFI	General Organisation for Industrialisation
IDS	Programme for Development of SWAP
IMC (Dev.)	Industrial Modernisation Centre
IMC (Tech.)	Executive Organisation for Industrial & Mining Projects
JTT	Joint Technical Team
JV	Joint Venture
JVS	Joint Ventures
LTC	Leather Technology Centre
M ²	Square metre
M ³	Cubic metre
MFTI	Ministry of Foreign Trade & Industry of Egypt
MoFTI	Ministry of Foreign Trade & Industry of Egypt Magra El Eion Robikki Tanneries Cluster Implementation Project
MRTCI	Project
OEIMP	Executive Organisation for Industrial & Mining Projects (IMC)
PMU	Project Management Unit
PPP	Public Private Partnership
Sq ft	Square feet
Sq m	Square metre
SWAP	Programme in Exchange for debit RELIEF
TC	Technology Centre
TMRRI	Tanneries Modernisation Restructuring & Relocation Initiative
TOR	Terms of Reference
TSC	Technology Service Centre
TSS	Tanning Sahrng Service

Part II: OUTPUTS

1. POSITION STATEMENT AND NEXT STEPS – FAST TRACK TANNERIES RELOCATION PROJECT

- The present Feasibility Study has been completed on April-06, including detailed financial plan for the project, with cost of EGP 1,009.12 mn; cost to tanneries (EGP 654 mn) of which grants, special loans and collateral EGP 313 mn.
- Beginning March Italian – Egyptian Debt Swap Committee agreed to release final tranche of funds to finance infrastructure and building construction works for a Robikki Industrial Park, covering a wider range of sectors than the establishment of a Leather District.
- The Tanneries Relocation Project will act at the first element of the Robikki Industrial Park, and can be a catalyst to establish the leather cluster associated with the park and a demonstration project for how Industrial Parks as a whole will be established.
- There is now a group of “modernizing” tanneries that are: committed to develop their tanneries to produce high quality finished leather; who know that this cannot be achieved within their existing premises at Magra El-Eion; so they accept the need to relocate to Robikki as the location that has been selected to establish a new tanneries cluster. The modernization will result in productivity increasing from 60 sq ft to 200 sq ft output per employee. The negative impact on employment at the first stage in the production process can be counter-acted by increased employment at the added-value second and third stages, but this will require a significant investment in re-training to avoid job losses.
- The “modernizing” tanneries are waiting to see the outcome of the feasibility study, in particular, the commercial implications for their existing businesses, and the financial implications of establishing the new tanneries, before formally committing themselves to participate in the Tanneries Relocation Project. On the basis that the results make commercial sense they are ready to commit. Once having given such commitments they want the project to be implemented as quickly as possible through having a Project Management Unit (PMU) opened in offices as close as possible to Magra El-Eion which will act as the communication centre for project implementation. There is an expectation that the feasibility study will include a detailed plan and funding to open the PMU by early May 2006.
- The “modernizing” tanneries have already made significant progress in developing their existing businesses, but are demanding a package of assistance that should be seamless between up-grading that can be

achieved before and after their relocation to Robikki. There are two crucial next steps for the “modernizing” group:

- The results of the feasibility study are communicated to them as quickly as possible to reach decisions on their future.
 - There is an immediate start to the delivery of a business development program to the committed tanneries as an integral part of the Tanneries Relocation Project
- The release of the final tranche of the Italian funds is linked to a request to set-up an overall Steering Committee of donors / funders to implement the Tanneries Relocation Project, as the first step to establish the Robikki Industrial Park. This needs to start meeting immediately to coincide with the progress on obtaining formal commitments from tanneries.
 - A ToR has been issued to develop the concept of Industrial Parks, with proposals to be submitted on 20th March. This includes Robikki as one of the named Industrial Parks. There is a danger that this study could hold-up progress in working with the “modernising” group of tanneries through the PMU. Agreement is required on how the establishment of the PMU will relate to the wider study. It is recommended that industrial parks policies may be developed based on a “real” successful model, as it could be the Robikki Industrial District (or Cluster)project, to be implemented starting before a wider enhancement of the feasibility study for Industrial Parks.

2. PROJECT CRITERIA

2.1 Project Preparation Facility (PPF)

Introduction

ASSOMAC has been contracted by Italian Co-operation to undertake a feasibility study of relocating tanneries from the Magra El-Eion area of Cairo to the Robikki District of Badr City. ASSOMAC have appointed Carlo Milone to act as Project Manager. ASSOMAC and IMC have to respond to a Terms of Reference (ToR) and Timescale of Activities (ToA) that were issued By Itakian Cooperation.

The project relates to all aspects of the successful and sustainable relocation of tanneries from the Magra El-Eion area of Cairo to the Robikki District of Badr City, and the cessation of tanning activities in Magra El-Eion, in socially and environmentally responsible ways. Where this project description has four key elements:

The meaning of “successful” includes: the tanneries relocate from Magra El-Eion to Robikki without having to be forced to move; they participate in the Tanneries Modernisation, Restructuring and Relocation Initiative (TMRRI) to establish new internationally competitive tanneries at Robikki, with their management and technical competencies having been significantly improved; the costs to the tanneries in establishing and starting to operate their new facilities have been structured to provide a high level of confidence that they will be profitable within the timescales set in their business plans; and the owners of the new tanneries have accepted their new cost structures and have succeeded in putting together funding packages to cover their share of the capital costs and to provide the required level of working capital.

The meaning of “sustainable” includes: the owners of the tanneries have confidence that they can trade profitably in the longer-term; different scenarios of raw material input supply, operating costs, interest rates (if not fixed for the duration of any loans), levels of production capacity utilization, final product prices and exchange rates have been prepared to provide a range of trading conditions under which the new tanneries will have to operate; the different scenarios have taken into account levels of risk and risk containment procedures have been applied to the planning of the overall project; the owners of the new tanneries having confidence in their ability to control their own commercial destinies without undue external interference; but, alongside the last point the owners of the tanneries also are committed to abiding by the minimum environmental, social, management and commercial standards that will apply to the new tanneries.

The meaning of “socially” responsible includes: all tanneries currently located at Magra El-Eion have equal opportunity to participate in the project; no favouritism is shown to any single tannery owner, or group of owners, to get into a better position than others to benefit from the project; all existing tanneries participate in the project on the same basis; decisions relating to the scale (production capacities) of individual new tanneries to be established at Robikki are made on a sound commercial basis, while taking into account the need to accommodate as many as possible of the existing tanneries located in Magra El-Eion – this will require a fair distribution of production capacity amongst the new tanneries; the terms and conditions under which the tanneries participate in the project to establish the new tanneries, in particular the elements set by all parts of the government, meet the “successful” and “sustainable” criteria explained above and are fair to all parties; the owners of tanneries and their employees who decide not to participate in the project are treated in a socially responsible manner to abandon their tanning activities; there is a sharing approach between, the owners of the Magra El-Eion site (in particular the Cairo Governorate), and the tanneries currently located in the area, on realizing the future development value of the site; and the owners of the tanneries that participate in the project treat their existing employees in a socially responsible manner in relocating their production and administration activities.

The meaning of “environmentally” responsible includes: all tanneries that participate in the project will be fully committed to using the new wastewater treatment facilities to be established at Robikki, and other forms of waste recycling / treatment, at all times; the use of these facilities are set at prices to be charged to the new tanneries which do not adversely affect the “successful” and “sustainable” criteria described above; GoE imposes its environmental legislation on tanneries that leave Magra El-Eion to locations other than Robikki to ensure that they have to comply with the same minimum standards are to be applied at Robikki; and GoE assures continuous water supply to the new Robikki tanneries to ensure that the waste water treatment facilities can be operated uninterrupted.

2.2 Deliveries of the Terms of Reference

Terms Of Reference Feasibility Assessment Tanneries Participation In Robikki Project

- I. To specify the total establishment costs of tannery units at Robikki, where “total” covers the costs to each party, regardless as to the source of funding, with the cost split allocated by party, including the tanneries. A separate detailed cost break-down is to be prepared for each tannery unit, with three scenarios to be used, each based on annual production capacity in millions of square feet: 7.8; 5.2; 2.6. The establishment costs are to cover all items required to have a fully operational tannery at Robikki undertaking its first commercial

production. This is to include any costs associated with closing, and de-commissioning, the existing tanneries at Magra El-Eion.

- II. In parallel to undertaking the last point prepare a profile of the current operating cost of three size categories of tanneries in Magra El-Eion, where the sizes equate with the new tanneries to be established at Robikki. Prepare a separate costing exercise to indicate the full impact on these operating costs for the new tanneries to be established at Robikki. The cost structure should differentiate between fixed overheads and variable / production costs and should cover two scenarios of employees being transported to the site, or living within the Badr City area.
- III. As part of this area of activity the JTT must highlight the areas where costs will be increased compared to the existing situation that applies in Magra el-Eion. In addition the JTT should prepare revenue projections for the new Robikki tanneries, based on a realistic build-up of production to crust and finished leather. An annual projected assessment of costs and revenues should be applied to determine levels of annual profitability, or losses, for each of the three types of tannery unit. This assessment must include the financing costs that will have to be met by the individual tanneries. The JTT must advise on the commercial acceptance of the results to the owners of the new tanneries. If the outcome is unacceptable the JTT must recommend ways of reducing the cost burden on the tanneries. The assessment of annual projected profitability / losses is likely to be required to be undertaken based on a number of scenarios taking into account the Consultant recommendations under the following points.
- IV. Being the target beneficiaries assess, on behalf of the Magra El-Eion tanneries, the options for applying an Incentive Scheme to be funded through a realization of the value of the Magra El-Eion site as it will become vacated. The Incentive Scheme is to have two elements:
 - a. Providing financial support to the owners of existing tanneries who want to retire from the sector and are willing to forego the opportunity of relocating to Robikki.
 - b. Providing access to a funding package that will ensure the new tanneries, to be established at Robikki, are not over-burdened with interest payments and loan repayments, and the tannery operating costs allow for profits to be generated. The core funds provided through realization of the Magra El-Eion land value are to be used to leverage, or be supplemented by, other sources of funding to maximize the value of the funding package.
- V. The JTT should recommend how an Incentives Scheme will operate from the perspectives of both the Cairo Governorate and the tannery beneficiaries. This is to cover whether the financial support is to be

provided direct into each new tannery business, or into a common fund on behalf of all of the new tanneries.

- VI. A specific area of activity is to explore options, and present recommendations, on the provision of housing for the employees of the new tanneries at Robikki. The options are to cover rented, rent to buy, and buy only, with benefits to be highlighted to the employees and to the owners of the businesses.
- VII. The JTT will assess options and recommend the approach that is to be applied to existing tanneries participating in the relocation from Magra El-Eion to Robikki. The options are to range from the “stick” approach of the Cairo Governorate issuing edicts for individual tanneries to be relocated / closed, to softer voluntary “carrot” approaches. The JTT is to describe clearly how the preferred approach is to be implemented and how the approach could change over a specific time period.
- VIII. The JTT should recommend the process of finalizing the design of each new tannery unit and how this will fit-in with the timetable for delivering the infrastructure works and the construction of the tannery buildings. This will include demonstrating to interested tanneries how the three size options indicated above can be developed into a wider range of design options as preferred by the investors behind each new tannery unit.
- IX. The JTT is to recommend how the temporary (based in Magra El-Eion) and permanent (based in Robikki) Technology Centres are to be used by the tanneries, and the costs that will be incurred by the tanneries, in using its services.
- X. The JTT is to recommend the role that is to be played by the New Company that is to be established to manage the implementation of the Robikki Project and how it is to be structured and operate, to meet the requirements of the beneficiary tanneries, and other sources of investment.
- XI. The JTT must provide a clear timetable on deadlines that have to be met by the investors behind each new tannery unit in reaching decisions on the specification of their individual tannery units.
- XII. The JTT must also prepare an inventory of equipment and machinery that will be required by each of the three size categories of tannery unit and keep track of changes in costs during the feasibility study period.
- XIII. According the results of the study, the JTT shall provide a revised Work Plan and Budget replacing the ones already submitted to the Italian – Egyptian Debt Swap Committee.

Study Execution

The feasibility study of the project is to be executed by a Joint Technical Team, comprising IMC (Technical) and ASSOMAC.

The study will be ultimately reporting in to Italian Co-operation as the donor involved in the project. ASSOMAC and IMC will be responsible for ensuring Italian Co-operation's reporting requirements are met.

Study Objectives

The objective of the study is to assess the current approach to implementing the project, and to recommend changes, that will result in all of the; "successful", "sustainable; "socially responsible" and "environmentally responsible" criteria being achieved simultaneously. As the actual achievement of these four criteria cannot be determined until the project has been implemented, the key objective of the feasibility study is to ensure their compliance is built into the way the project is designed (in the generic rather than technical sense), funded and implemented.

2.3 Project Execution

The achievement of the four project criteria can only be realised by a series of stakeholders working together, in a co-ordinated manner, to meet the project objectives which are wider than their individual spheres of interest and responsibility.

These stakeholders, include:

- The Ministry of Foreign Trade and Industry (MoFTI) as IMC (Technical), IMC (Development), and the Federation of Egyptian Industries / Chambers of Industry all operate under the auspices of this Ministry.
- The Chamber of Leather Tanning as representing the interests of its member tanneries located in Magra El-Eion.
- IMC (Technical) as responsible for the technical design of the project.
- IMC (Development) as responsible for the modernization of Egypt's industry.
- The Steering Committee for the Leather Tanning sector as established by IMC (Development) and responsible for guiding it on the strategic development of the sector as a whole.

As Project Coordinator is located at the offices of IMC (Techincal), where it is constituted the PEO (Project Executive Office), it is understood that it will be in the lead in developing this working relationship.

As IMC is responsible of the reporting, it is further established that PEO and Project Coordinator will work to develop the reporting every month to be submitted to the Italian Cooperation.

Scope Of Study

The scope of the study is restricted to tanneries that operate at any of the three stages of production from wet blue through to finished leather, whether operating on an integrated or sub-contract basis. It does not cover: raw material stores (selling agents); chemical stores / laboratories; glue manufacturers; leather fibreboard manufacture; transport of products between any of these; or any other forms of supporting activities to the tanneries. A fundamental basis of undertaking the feasibility study, and preparing for the implementation of the project, is that if the tanneries move from Magra El-Eion to Robikki, all of these other activities will have to move as well if they are to stay in business. The specific relocation support requirements of these other businesses and their possible participation in the TMRRI should be viewed as a separate initiative.

The original plan for the Robikki District envisaged the tanneries operating within a much wider and larger overall Leather District. Although this may still happen it is to be viewed as a later stage of development of the district and is not within the scope of this feasibility study.

The original plan for the Robikki District was to be implemented in three phases with a total production capacity of 248.5 mn sq ft, with Italian Co-operation involved in all three phases. This has been changed to Italian Co-operation's involvement being restricted to phase 1 and the production capacity of this phase being reduced from 110 mn sq ft to between 60 and 80 mn sq ft, with the exact level of production capacity to be defined by the feasibility study.

Presentation Of Project

Although the involvement of Italian Co-operation currently has been restricted to phase 1, the Chamber of Leather Tanning is still stating that the original three phases will be implemented. The issue of how many phases will be implemented and the final level of tanned leather production capacity of the Robikki District will be decided by GoE in co-operation with representatives of the Leather Tanning Industry.

It needs to be recognised, by all of the stakeholders, that all of Italian Co-operation's EGP 158 mn (of 162 mln total, including consulting) will now be going into funding the implementation of phase 1, as this will have implications for the funding and implementation of any later stages. In particular, this message needs to be presented to the tanneries as those which opt to delay participating in the project, and wait to see how it performs during phase 1, before committing to participate may have to become involved on less favourable terms.

TMRRI, Clusters And Industrial Parks

IMC (Development) has three approaches to development that relate to the project:

- TMRRI, which provides a framework for delivering business development services within the needs of Egypt's Tanned Leather Industry, as a whole, to modernise, restructure its excessive production capacity, and relocate out of traditional production areas and premises. The TMRRI has been designed specifically to meet the requirements of the Tanned Leather Industry, to ensure that the delivery of the business development services has the required level of positive impact on the industry. IMC (Development) has a line within its 2005 / 06 budget which dedicates funds for delivering business development services into tanneries and leather products manufacturers.
- Clusters represent concentrations of businesses from the same sector / industry that have common requirements for the delivery of business development services, or have common interests in developing the capabilities of their sector / industry. IMC (Development) has 2005 / 06 budget lines for assisting the development of clusters.
- Industrial Parks, are a relatively new concept to Egypt, and represent a new way of developing what have been referred to as Industrial Zones up to now. A key element of the new approach is that new private – public partnerships will be formed to raise the funding that is required to establish the new Industrial Parks, with Local Industrial Development and Investment Agencies (LIDIAs) used to achieve integrated service delivery by all stakeholders into businesses located within the park.

Not only can the project benefit from being associated with the TMRRI, but it could also possibly benefit from being included within IMC (Development)'s Cluster and Industrial Park Programmes. The above three areas of IMC (Development) activity will only be covered to the extent that the link assists with meeting one of the four criteria described above.

Other Areas Of Search

In addition to IMC (Development), other areas of search for links into the project will cover the: transport requirements of tannery employees; housing provision at Badr City; and social and community facilities at Badr City.

Technology Centre

This will be an area of the feasibility study that will require direct approaches to the relevant section within MoFTI to request information to be made available. Generally, we understand that the Technology Centre will provide product testing and development facilities, including trials of different chemical mixes to process the raw hides and skins. We will need to be told the way these services will be charged to the tanneries. Likewise, we understand that vocational and skill up-grading training may be delivered through the Technology Centre, and again we need to be told the basis on which training delivery will be charged to the tanneries.

3. METHODOLOGY

Implementation

Acknowledgment

Analysis of background overall project documents

Direct contacts with project major players (institutional bodies, intermediate agencies) players

Meetings and/or interviews with Magra El Eion stakeholders

Collect information from other (direct contacts/documents) useful sources, like International and EU cooperation agencies, ICE (Italian Foreign Trade Office), other leather entrepreneurs, suppliers and clients within the leather value chain



Assessment of measures

Measuring market and production trend, products costs, capital goods and intermediate goods, common facilities and accessories related to the sector in object



Set up of a macro economic financial model of the start up and settlement of the New Robikki Tanning Leather District



Outline of a Networking methodology of the the Magra El Eion Leather Cluster

Submitted to one of the two following conditions:

A	B
Starting to implements networking activities	Benchmarking an apparently feasible model of network

Solution A may be effective, solution B may be only a preliminary feasibility for future implementation



Design micro economic models of businesses relocating from within the magra El Eion cluster to Robikki



**Revise the old plan and Design new project plan including:
Organizational networking models**

Economic models

Engineering models



It must be understood that the engineering perspective must be introductory to the social and economic aspects of the project and not the other way down

Abstract of the Methodology

The methodology is of type “top down”, designed to start from the general picture of the district and subsequently to enter in the detail of the single enterprises. All the inquiring efforts gather to economic micro level on the characters and the behaviours of the district enterprise; to macro economic level on the general structure of the district, referring to the relationships between the unities that constitute it, on the connection between economic players and institutions, on the concept still broadly indefinite of district network.

Key Outputs

Magra El-Eion area 755 “establishments”; 724 businesses; 310 are tanneries, representing 43% of all businesses; an area of approximately 300,000 m² can be vacated at Magra El-Eion. The current planned approach of evicting businesses that are within a 50 m area from the site boundary will impact on 58 tanneries, which represents on 18.7% of the total number of tanneries. More significantly this approach will impact on only 7 of the large tanneries (over 500 m²), which is 12% of the total number of tanneries in this size category. The overall production capacity at Magra El-Eion is estimated to be about 120 mn sq ft, with a current real production put to the tune of 50 mn sq ft.

Evidence that the reduction in the domestic supply of raw hides and skins is increasing imports, with the negative trade balance in these items increasing from EGP 0.6 mn in 2004 to EGP 3.6 mn for the first 9 months of 2005. Domestic production of tanned leather in 2003 was 150 mn sq ft.

One key issue that is emerging is that there are a considerable number of unskilled workers employed to manually move the raw hides into the tanneries, move them around the tanneries and to manually load the containers. It has been indicated on a number of occasions that these employees will not be required after the relocation as this activity will be done by forklift truck. In Magra El Eion the productivity per person is equal to 60 ft²/day, assuming that most of the production is wet blue. The envisaged productivity in Robikki with modern lay out and technology will arise 200 ft² day/man . When upgrading the value chain up to finished leather, the production capacity per person will be reduced, with the opportunity of employing again Magra El Eion labor after re-training.

Identification that two thirds of the costs that are included within the first phase of implementation are estimates with no real basis.

A detailed work program on the issues that need to be addressed to achieve a new integrated approach to implementing the new Tanneries Cluster and to have detailed costs that can be both used by all parties to identify their respective contributions to project implementation, and to prepare business plans for the new tanneries.

4. NETWORKING

4.1 Model For A Network In The Technological District Of Robikki Grouping The Magra El Eion Entrepreneurs in the Future Robikki Network

The implementation of district development strategies varies considerably from one area to another. In the European most important areas, like the Italian leather districts, there are significant differences as regards the “district members in limited areas”, its organization and the business support services offered. **All the Italian districts are “technology districts”, defined for the purpose of complementary co-operation between SMEs, leather clusters and technology poles: this form of organization is the “a network district”**

The model of local technology districts of the referred Robikki area results from the background analysis and evaluation of the clustering strategies in Italy and on the results of an enterprise survey carried out in Magra El Eion. The model highlights first of all best practices that have successfully stimulated the participation of SMEs in networks and enhanced their access to technology.

Secondly, it highlights common factors underpinning the success of all districts.

There is, however, no perfect model applicable everywhere in the same way. The basic model recommended below will have to be adapted to the specific socioeconomic, political and cultural characteristics of the Magra El Eion area.

In addition, this model results from the analysis of best practice in leather tanning sector fields. According to the industry sector in question, field might be organized in different ways. The present model will therefore have to be adjusted to the requirements of the different technological level of the local enterprises.

Network Outline

Enterprises needs the network to assist them in transferring the production units, in accessing new market opportunities, and in achieving long-term competitiveness. If the network fails to deliver on these expectations, enterprises are likely to leave, especially the small ones.

Technology networks offer suppliers an adequate framework to respond to increasing industry requirements. Co-operation in local networks, both vertically and horizontally, helps enterprises to face new challenges, although

these have different expectations according to their size, financial position and technological profile.

Furthermore, enterprise networks are instrumental in offering business support services and in facilitating enterprises' access to resources such as technology, qualification, internationalization tools, etc. The Robikki district network should be well placed to generate the necessary contacts and to create new relationships.

In the process of establishing the Robikki network, three basic issues have to be dealt with:

- i) Determine the basic organizational principles in the technology district;
- ii) Decide on available business support services;
- iii) Set up a know-how management and communication structure.

Basic Organizational Principles

The basic organizational principles of a technology district and network are determined by answering the following questions:

- Which partners are to be involved in the network? Which associations, public bodies and institutions are to be integrated?
- Is a co-ordination mechanism required? If yes, who assumes the role of network coordinator? Which institutional organs (e.g. advisory committees) ensure the consultation of partners and a balance of interests, in order to reach synergies and added value for the members?
- How shall the network and its services be financed?

Network Partners

It is important to integrate the whole production chain in the network, including producers, service industries and technology poles, in order to generate a flow of communication and know-how between them. Competitiveness can only be achieved by means of grouping among enterprises and institutions that have different strategic goals such as developing, introducing or applying new technologies. This is reflected in the answers to the enterprise survey carried out. Enterprises are primarily concerned with the integration of their supply chain partners: suppliers, customers and technology poles.

Usually enterprises are of the opinion that associations and public sector institutions should not be admitted as key members of the network. However,

in order to guarantee the basic functions of the Robikki network, such as providing access to new markets, facilitating technology transfer and strengthening the competitiveness of the local industry, both enterprises and intermediary organizations should be involved.

The extent of the participation of such organizations must be adapted to the objectives of the network.. Associations can act as an important interface with national authorities.

As regards public sector involvement, the main question is to which extent a local technology district should serve local economic development objectives. If the district is part of an overall local development strategy, both politicians and the public administration are responsible for coordinating relevant activities. In this context, political back up of a network is essential.

As regards the involvement of large manufacturers (and system suppliers), most SMEs favour their participation in the network, in order to be informed of market developments and requirements. In most leather technology districts in Italy, important tanners participate in the networks. Large tanneries are needed to push the upgrading operation process forward and to provide an insight to future developments, while small units find difficult to face the new investments needed to relocate the units, start up the production and implement ecological processes. .

However, the participation of large tanneries (who normally have an important role in the decision-making of the field) is not always appropriate. When the representation of the collective interests of the small tanneries vis-à-vis the manufacturers is one of the network objectives, then this sub-group of the network should not include the latter. **The field organisation grouping large tanneries should be different from the organisation grouping SMES and artisans as well.**

Enterprises do not like to be in the same network as their competitors, but this might be necessary for strategic purposes. While the wider network should always leave room for competitors, close co-operation projects are the responsibility of individual enterprises. These should therefore decide on whether or not a district member needs to be included in a project or not. However, rather than a closed system, a network is an open process.

Network partnership can therefore be extended or restricted, within the same district area or outside too, in line with new challenges.

Network Co-ordination

In all successful technology district-networks, co-ordination is ensured by neutral moderators: local institutions, associations, or other organisms designed by the partners themselves . Without a common, unified platform for technology networking, individual bottom-up initiatives may stay isolated from each other.

The analysis of the sample of different and complex technical needs of the local Magra El Eion tanning sector, demonstrates that network co-ordination is indispensable. The analysis shows that individual members of the tanning community of the area are not usually closely inter-linked. Network co-ordination is needed to ensure the continuous flow of communication, the co-ordination of activities and the concertation of partners' interests. Moreover, the absence of co-ordination would engender transaction costs that are too high for individual partners.

The following basic co-ordination processes must be handled:

- * Exchange information and communication
- * Achieve a balance of interests and conflict settlement
- * Create mutual trust between the network partners
- * Prepare the new production units in the Robikki area and start up decision-making
- * Build on and strengthen common interest.

The results of the survey underline that most of SMES needs the district network to support them with technical assistance, better if managed by a neutral agency.

While both large and small tanneries may have specific interests, and are divided between two sub-networks, they may not conflict with the competition oriented goals of each district member or network partner.

As regards the moderation of the network, the balance of interests among the partners has to be continuously ensured. A culture of trust and understanding is essential for the successful development of the Robikki leather network. Moreover, the network managers must be sufficiently qualified and work efficiently in terms of minimising expenses for the network partners.

In order to foster industry acceptance, traditional public sector institutions are advised to play a less visible role in the operational management of the network. Nevertheless, as outlined above, public sector support is indispensable in the setting up of the Robikki district and network.

As regards the institutional status of the organisation co-ordinating the network, different models exist:

- a) an independent association
- b) a local economic development agency
- c) an association, or a cluster organisation of associations

A success factor of network coordination and district management is the availability of full-time, professional staff (mostly consultants).

The network in object may be developed into self-managed organisations in the second stage of life, after the start up cycle. Network co-ordination then will be transferred from public bodies, or independent agencies, to the partners of the Robikki network district themselves.

Financing The Network

Establishing and maintaining a network engenders substantial costs. During the start up phase of the district and network, it is necessary to invest in the setting up of the structures, first of all those designed for the environmental protection, like ETP (effluent treatment plants), and sludge recovery devices. While this investment does not generate an immediate benefit for enterprises, it may be beneficial for the area on the whole in terms of economic development and employment.

The establishment of a district network is in the collective interest, it is equivalent to the provision of a collective good. Consequently, initial expenses for the setting up of the district must be sponsored (at least partially) by a third party representing the collective or public interest (either an association representing the collectivity of the enterprises concerned or the public sector). In order to achieve successfully the target to transfer all local tanneries from the actual areas to the district, initial expenses for setting up and running the network must be covered by public funds, as enterprises show little interest, if not forced, in investing in uncertain long-term projects. The need for external resources is crucial in the start-up phase. In a second stage, once the network is well established, the participating enterprises experience a visible net benefit. It could be envisaged that the network starts with public sponsorship and afterwards public funds are gradually phased out while members are requested to contribute to the financing of network services, and the network will compensate start up expenses to the public body involved. Different membership fees are set according to the number of employees and/ or the turnover of the member in question.

The appropriate financial contribution should correspond to the services offered and should be agreed upon by the partners. **Only a small minority of the enterprises examined in Magra El Eion is now able to support the general services of transferring and upgrading the present units.**

However, a large majority of enterprises are able to contribute individually to specific services that are tailored to their individual needs.

They will therefore subscribe to useful services at an acceptable price.

Network Activities

The success of the network has to be geared towards bringing the greatest possible benefit to as many partners as possible. In order to fulfil this objective, it is necessary to make business support services available to individual enterprises. Most importantly, it is necessary to inform enterprises about the advantages of networking and about the availability of business support services.

The following services and activities may be provided in the network:

- Information and Assistance to set up and transfer the leather district;
- Support to co-operation projects;
- Support to training;
- Support to internationalisation;
- PR and marketing.

Information and Assistance to Set Up and Transfer the Leather District

The acknowledgement activity in Magra El Eion to identify the enterprises that will transfer their business to the new Robikki district will serve as an information and communication platform for the network partners. The most important information services are those related to the advantages of participating in a network, i.e., those regarding business opportunities and technology transfer. This requires the network to have a sound knowledge of market conditions and of new technologies (among other issues).

The enterprises examined consider information on the following issues necessary:

- Economic trends (market requirements, products, services, etc.)
- Technological trends
- Information on latest technologies
- Information on the availability and applicability of technology
- Information on Enterprises
- Enterprise profiles to facilitate the transfer
- Information on competitors (strengths and weaknesses)

- Information on local supply chains (which products are produced locally and which are their strengths?)
- Public funding

Support To Co-Operation

The enterprise survey carried out shows that co-operation projects between different enterprises and technology poles may successfully facilitate the transfer of advanced technology to the enterprises. There is strong evidence that co-operation projects are the single most important and successful methodology to foster enterprise upgrading and technology transfer. However, enterprises need assistance throughout the process of transferring the production units.

The survey shows that enterprises and technology poles consider necessary the following support services that facilitate the initial stages of co-operation between partners:

- Project initiation;
- Partner identification;
- Match-making services/ co-operation partner exchange;
- Establishing connections to partners;
- Organisation of the measures of technical assistance to be implemented in consultation with the enterprises;
- Allocation of tasks and responsibilities;
- Drafting feasibility financial models
- Assistance in applying for supplementary public funding (aid to groups of enterprises to encourage co-operation), etc.
- Bringing together partners should not be limited to merely exchanging enterprise names. It requires analytical and methodological support as well as knowledge of different corporate cultures.

Support To Training

In the framework of the Robikki network, training can be understood as making available a wide range of educational possibilities. These are focused on the specific needs of the sector (e.g. thematic seminars on relevant technical issues, training for professional qualifications; workshops with

company representatives, inter-company learning, visits to partner enterprises, etc.). Opening internal seminars of leading enterprises to partner enterprises on a mutual basis can also be a good training opportunity.

Support To Internationalisation

When tanneries go abroad, they have two core objectives: profits increase by applying different cost levels from different competing areas, and growth by market extension.

The enterprise profiles of the survey show a low international share of turnover and procurement. The focus on special products and key-areas is particularly welcome for successful business expansion.

When enterprises go abroad, they usually follow two basic paths. The first is to follow a customer, and subsequently, to expand in the foreign market. The second is to approach an interesting foreign market without being led by a customer. Both approaches cannot be implemented without joint activities, the scope of which can range from loose co-operations restricted to single projects to joint ventures or even take-overs.

Basically, according to the results of the survey, enterprises expect two kinds of services to facilitate their internationalisation process. Firstly, they want more information to help them approach foreign markets (enterprise profiles, foreign technological know-how, etc). Secondly they want assistance in establishing relations with potential foreign partners. Moreover, they need information on the availability and applicability of funding opportunities.

In order to assist enterprises in their internationalisation process, it is necessary that the network participates to international events and co-operation exchanges programmes.

PR and Marketing

The Robikki network has to promote itself in order to attract new members, to create confidence and a positive attitude towards the industry in the area and, more importantly, to build a common identity. In this context, **the development of a cluster logo proves very effective in the envisaged district.**

Recommended public relations activities include the provision of information material, the positioning of the network both nationally and internationally, the presentation of the Robikki district perspective on the Internet, the placing of articles in relevant newspapers, etc.

Know-How and Communication Management

The Robikki network must provide the above-mentioned information and support services continuously and ensuring a high level of quality. This requires the implementation of an efficient information service based on modern information technology.

Robikki network needs a communication platform where information between partners is exchanged and where the available know-how is systematised and provided to the partners. Such a platform should be easily accessible and allow the partners to retrieve information directly.

In order to systematise know-how and communication, the following questions have to be dealt with:

- Which kind of know-how is made available? First phase: information that can be easily retrieved from existing data is provided, e.g. data on consultants, experts or other enterprises; second phase: more extensive advice is given, for example on the know-how and experience of a specific research institute; third phase: access to research and analytical work is provided, including expert assessment on different issues, ranging from country reports to the use of specific technologies and advice on the most appropriate details for an investment. Regulatory issues may also be dealt with.
- Which methods are employed to ensure accuracy and timeliness of the data? During the start-up period of the network, a pool of know-how must be installed (databases, etc.). Basic information can be collected e.g. through an enterprise survey. Once the database is operational, the members of the network should be asked to update the respective data (e.g. offer and demand of co-operation requests, economic and technological profile).
- Which are the possibilities for partners to access the information pool? Regarding the different information technology standard at the level of the partner enterprises, communication in writing, by fax, telephone and e-mail should be made possible. An internet-based solution allowing for a shared workspace is also appropriate.
- Which information technology tools are essential for the successful operation of the network? The basic data regarding enterprises and co-operation projects (economic and technological profiles of local enterprises, survey of experts on certain topic, information on co-operation projects, etc.) is stored in multi-field databases (where it is possible to retrieve the necessary information in any given combination).

A well-established approach for the start-up and management of the Network

Setting-up and start running the Robikki network is a complex process. This process, which leads through the different stages of a transfer from the old district of Magra El Eion to Robikki, can vary according to the following elements:

- a) Participants in the new starting district;
- b) Goals of the network;
- c) Framework conditions the network has to live in;
- d) District/Network management.

Nevertheless, the procedure described below will be helpful in the start-up of the Robikki district.

Step 1:

Goal, Potential and Strategy

This informal first step consists of bringing together the key players of the future network. The network begins its existence with an agreement and commitment on common strategy and goals for the network.

Step 2:

Starting the Network

Afterwards, the (meanwhile selected) network co-ordinators (PEO –Project execution Office- and later PMU –Project management Unit-) has prepared the operative schedule of the network. This is a professional project management plan including structure of projects, time schedule, budgets, staff demands etc., reflecting the framework conditions in which the network is to be implemented.

Equally important is the setting of common rules regarding the role and interaction of district/network partners.

Step 3:

Implementation of the Transfer

The main goal here is to set-up an adequate information and communication platform connecting the network management with all its participants and the involved intermediate agencies and institutions, grouped in the Project Co-ordination Committee.

The activities run by the network management should fulfil the expectations and demands of the network participants. The organisation of high quality events and the provision of high quality services are essential for creating confidence.

Step 4:**Management of the Network**

The management of the network, the Project management Sub-Committee should focus its activities on the following five areas:

- i) Information and communication of financing facilities ;
- ii) Training
- iii) Innovative projects (e.g. co-operation between several enterprises, transfer of location plus technology upgrading etc...);
- iv) Facilitation of the transfer services;
- v) Marketing and PR.

The PMU has to use highly sophisticated methods of multi-project management to guarantee quality, cost efficiency and timely implementation of all actions and the operation of the whole network.

Step 5:**Implementation calendar of the Robikki Network**

Regular auditing of network actions and/or the gathering of feedback from network members, are necessary to continuously improve the management of the network.

Both tools are necessary to keep the network actions in touch with the developing market, participants and framework conditions.

The time to finalise each step depends on the following:

- a) Goals of the network;
- b) Size of the new district (number of participants and companies size);
- c) Framework conditions (size of the PMU team, financial resources for network management available);
- d) Preparation of the district in an informal period, in which the vision of the network has to be taken up by some key persons.

As regards the Preliminary Action Plan proposed by the JTT (Joint Technical team IMC tech.- Assomac), steps 1, 2 are carried out within less than one year. Step 3 and 4 can continue for several years (for 6 years).

4.2 A Network Model

Networking: The Origins And Current Development Of The Tanning Industry At Pisa

The Magra El Eion tanning cluster is something similar to the Italian leather “districts”, because of the traditional history, and similar regarding the function of small differentiate leather world with a significant grade of internal integration between the several players. Particularly the Magra El Eion cluster may be compared to the Pisa (S.ta Croce sull’Arno) tanning either handcrafted or industrial activities that have always been at the top of the Italian domestic production. In particular, in the 70’s, there was the maximum development when a frame suitable for current exigencies established.

The scientist Tito Antoni states that the close and secular exchanges relations with Northern African Saracens boosted the tanning art of Pisa since the XII century. With a privilege dated July 10th 1156, the King of Tunis exempted Pisas from the duty due for alum export, very important raw material for the leather industry which was evidently increasing in our town.

In this connection, Professor Marco Tangheroni reminds that a parchment dated 1116 already confirms the import of the famous Cordova (in those days the greatest and richest Spanish town) leathers at Pisa; in some of his essays he states that going back up to the XI century for such still higher similar contracts with the Islamic world is not hazardous.

The availability of an enormous quantity of water, indispensable element for the tanning process; the closeness to forest areas with myrtle-groves and chestnut woods; tannins’ extraction sources; considerable regional cow and sheep farming which supply considerable quantities of hides and skins to industry (which on the other hand could easily get raw materials from far countries through waterways), constituted the favourable conditions for the secular achievement of Pisa leather.

Professor Bruno Casini remarks that this industrial activity lived and flourished even when – owing to the Florentine dominion (1406) – most of all activities in Pisa declined, even if great merchants of the leather sector like Jacopo di Corbino could allow themselves to be among the richest citizens, also excelling even upon the emerging colleagues in Florence.

The tanning industry – before totally establishing itself in the province – still existed in towns at the end of the of the XIX century. Santa Croce sull’Arno is currently the centre of an internationally relevant tanning pole which includes other four towns: Castelfranco di Sotto, Montopoli in Vald’Arno, Santa Maria a Monte and San Miniato; according to the 1991 (updated at December 31st 1992) last census on industry and trade, the tanning sector in this area employs 7.550 people distributed in 1028 working units – if compared to 1981

census, it is an increase of 95 working units and 249 persons. Area tanneries cover almost 30% of the domestic production of leathers for leathergoods and more than 90% for leather soles.

This is an important datum, considering that the 7.550 employees only represent the 5, 4% of the working population of the Pisa province (139.932 employees on 394.277 inhabitants, updated to 20th October 1991). The Pisa tanning sector expresses an economic valence which sets it at the leading places of Tuscany's productive-economic context, with an annual turnover of about 2.500 billions. 25% of the production is destined to export and the remaining 75% to the domestic market. Export (from January 1st to September 30th 1992) is 288 billions and 542 millions, equal to 10% of all domestic sector exportations. CEE absorbs the 65, 15% of exportations, the other European Countries the 7, 98%, USA the 4, 35% and Extra-European Countries the 22, 53%.

Environmental impact

The ecological issue has been faced by tanners with the accomplishment of some treatment plants among the biggest and most efficient in Europe, favoured by the phenomenon of joining forces which began developing during the 70's.

Companies have gone into partnership in three organizations: the Association of Tanners, founded in 1976 and gathering about 300 tanneries in Santa Croce, Castelfranco di Sotto and Fucecchio (Florence); the Sub-Contractors Associations, Embossers, Ironers and Similar (ASSA) and the Ponte a Egola Consortium, gathering 150 tanneries. In 1980 the members of the first two associations founded the Aquarno Purification Plant Consortium Spa, which took the task of completing the extension of the already existing centralized purification plant upon itself, built by the town of Santa Croce in 1972, that is to say four years before the Merli Law (law studied in the parliament by Gianfranco Merli about water purification, 1976) issue.

The plant, which in 1982 allowed the chemical-physical treatment of 30.000 cubic meters/day of public and industrial wastes, activated in 1983 the biologic treatment line and has nowadays a purification potentiality equal to 2 millions of equivalent inhabitants.

Other two plants have been made for logistic reasons at Ponte a Cappiano, Fucecchio hamlet, and at La Confina, by Castelfranco di Sotto, respectively serving 48 and 8 enterprises. The consortium plant for chromium recovery also fits in this context.

In 1981 the Chromium Recovery Consortium Spa was founded, currently gathering 172 companies. The plant, covering a 13.000 square metres surface, may be considered the first one in the world either for its dimensions or for its advanced technology. Ponte a Egola tanners, specialized in leather soles manufacturing, realized a consortium plant, working since 1981 and

managed by Cuiodepur SpA (collecting 164 companies and the town of San Miniato), with a potentiality of 9.000 cubic metres per day of industrial dumping and 1.000 of public one. The other great ecologic issue is sludge derived from the manufacturing process. Technicians of the production multi-area service of the Pisa USL – according to precise directives of the Region and to a patent coming out from a research of the “Argo”group, Pontedera – since 1987 are in charge to solve sludge item.

4.3 Questionnaire distributed through Magra El Eion

Questionnaire IMC dev. for Magra El Eion

17/12/05

Industrial Modernisation Programme - Industrial Modernisation Centre

Questionnaire for Magra El Eion Tanneries to be relocated in Robikki area

i. GENERAL

1. Name of Company
2. Labour number
3. Contact (Manager)
4. Telephone
5. Address
6. Fax
7. E-mail
8. Registration Nr.
9. Business sector
10. Licence: Yes, No

ii. PRODUCTION

11. Raw material: buffalo, cow hides, sheep/goat skins, pork, others
12. Activity: Wetblue, crust, finished
13. Consumption: water, electricity
14. Position (Vertical integration): outsourcing/subcontractor, other
15. Location: occupied area: to 600 sq mt, to 3.000 sq mt, to 7.000 sq mt

iii. MARKET

16. Export
17. Local
18. Total output

iv. NEEDS FOR RELOCATION

19. Requests
20. Difficult of production
21. Technical assistance from IMC:
 - a. Expertise
 - b. Quality upgrade
 - c. Web communication
 - d. Tutoring trade fairs participation
 - e. Assistance in buying equipment
 - f. Training

5. THE PROJECT IN CONTEXT

Total domestic supply of raw hides and skins was 150 mn sq ft in 2003. With projected annual increases in supply of 2.4%, the level of domestic supply will be 194.7 mn sq ft by 2014. Levels of imports of raw hides and skins represented under 1% of total supply during each of the years between 1998 and 2003. It is recommended that future increases of imported hides and skins should not be used in specifying the scale of the Robikki Project, as annual levels of international supply are uncertain and most countries want to protect their national supply to support their domestic tannery sectors. In recent months media reports have indicated that Egypt is becoming increasingly reliant on imported meat with the number of domestic animals available to be slaughtered in decline.

At the time of preparing this report domestic raw hides and skins supply figures for 2004 are not available and therefore it is not possible to indicate if the rate of growth in supply has either fallen, or even reversed. As there are no results to the contrary this study has assumed the continuation of 2.4% annual growth in supply. It is essential that this situation is kept under regular review as any reduction in the rate of growth of raw material supply will have implications for the level of production activity at Robikki.

Egypt's Tanneries Sector

Domestic production of tanned leather in 2003 was 150 mn sq ft. Egypt's Tanneries Sector is estimated to have total current production capacity of 394.8 mn sq ft, excluding any developments at the Basateen site (former Egyptian Leather Company). There is currently 241.2 mn sq ft of excess production capacity, representing 157% of current raw material supply, with an average production capacity utilisation rate of 39%.

As of now 71% of the output of Egypt's tanneries is exported, but the breakdown of these sales are: 84.6% wet blue; 14.1% crust; and only 1.3% as finished leather. As wet blue represents the lowest level of added-value and finished leather the highest, there is a significant lost value to Egypt's economy. The reasons for this situation are: the loss of previous markets for finished leather in the former Soviet Union; and a downturn in the level of demand for finished leather from domestic leather products manufacturers. In response to these market changes Egypt's tanneries opened-up new markets, but only to find that their new customers would not buy either finished leather, or crust, due to quality issues.

A key strategic objective for the sector is to increase the proportion of raw material that is processed into and sold as finished leather, back-up to 100%, within a period of six years. The most fundamental issue now constraining

market development is the lack of modernisation within the sector. It is recommended that modernisation should be the leading strategic development objective for Egypt's Tanneries Sector, with relocation being a means to achieve this objective.

Based on the current approach to implementing the Robikki Project the first new Robikki tanneries will be ready to start commercial operations from Q3 2009. It is recommended that each of the new tanneries should be capable of producing high quality crust from the start of their commercial operations at Robikki, with them supported to produce high quality finished leather two years later. Under the current timescale it will be Q3 2011, six and three quarter years from now, before the first tanneries are ready to start producing high quality finished leather. Under the recommended alternative timescale the first tanneries would be ready to start operating commercially from Robikki is Q2 2008, with the production of high quality finished leather starting from Q2 2010. As this is five and a half years from now it is within the strategic timeframe of six years.

Comments On Project Specification

It appears that original project specification in 1997/98, of 241.8 mn sq ft of production capacity did not take into account:

- The identification of domestic raw material supply of 126.0 mn sq ft at this time.
- The existence of 78.1 mn sq ft of production capacity outside the Magra El-Eion area.

Since the submission of the report in 1997/98 there have been two significant developments that need to be taken into account in specifying the Robikki Project:

- The opening of the Quesna Tannery with 24 mn sq ft of production capacity.
- The sale of the production facilities owned by the Egyptian Leather Company (public enterprise in liquidation) with a condition of sale being that the facilities must be used as tanneries. This facility had original installed tanning capacity of 80 mn sq ft, which we understand relates to the capacity of the wastewater treatment facility.

There appears to be confusion between actual annual production levels and annual production capacity. The recent IMC TECH. report indicates that actual annual production from tanneries based in Magra El-Eion is 95 mn sq ft. We agree with this figure, but the report also indicates that the latest specification of 200 mn sq ft of production at Robikki will represent a doubling of the size of the tanneries. We do not agree with this conclusion as we have estimated the

total production capacity of the tanneries in Magra El-Eion to be 292.7 mn sq ft. If the point of comparison is production capacity the implementation of the Robikki Project will require a reduction in annual production capacity of 31.7%. Using an increase in production capacity as a way of enticing tanneries to participate in the Robikki Project presents a false picture, where the real situation is that the existing tanneries will have to down-size.

Excess Production In Context

As of now there are only two modern tannery units in Egypt: Quesna which is an Egyptian – Spanish joint venture with 24 mn sq ft of production capacity; and Techno with 15.6 mn sq ft of capacity. The former is operating effectively and has recently started exporting finished leather to Spain, but the latter has not operated commercially since it was opened 10 years ago. Together, these tanneries represent only 10% of Egypt's total production capacity of tanned leather, with the other 90% being in tanneries with varying degrees of archaic production facilities, requiring significant modernisation. For most it will not be possible to achieve this within their present premises and therefore relocation is inevitable, if modernisation is accepted as the way forward.

The low level of production capacity utilisation is not a significant issue for existing tanneries as most operate with low cost bases. Due to the age of the businesses and their facilities most have: fully depreciated assets; no loans to finance; and low operating costs, such as no payments for water or environmental charges. The existing facilities can therefore make profits at relatively low levels of capacity utilisation. This will not be the case for tanneries that are modernised, which will have break-even points at about 75% capacity utilisation. The need for down-sizing throughout Egypt's Tanneries Sector is directly linked to achieving a successful modernisation of the sector, where the measure of success will be the new tanneries trading profitably in the long-term.

Project Specification Conclusions

The implementation of the Robikki Project should be viewed within the context of modernising and down-sizing Egypt's Tanneries Sector, as a whole, to achieve a future target annual production capacity level of 225 mn sq ft by 2014. As the focus of this exercise has been the tanneries at Magra El-Eion the need to develop modernisation and relocation plans for tanneries throughout Egypt has been outside the scope of our work. It is recommended that there should be a single down-sizing ratio that should be applied to all tannery facilities to be continued in the future. The starting-points are therefore to: undertake an assessment of tanning production capacities throughout Egypt; determine the locations where the modernised tanneries will operate and the size specifications for each location; undertake continued reviews of raw material supply to determine if the target production capacity

needs to be changed; and based on all of these factors decide the down-sizing ratio.

The most fundamental conclusion is that only Phase 1 of the Robikki Project, based on the ASSOMAC specification, can be justified to be implemented as of now, which equates with 14 “standard” tannery units, each with annual production capacity of 7.8 mn sq ft.

Number Of Tanneries

Currently there are over 300 tanneries in Magra El-Eion. Based on the combination of, the above conclusion with the “standard” unit project specification, there should be only 14 new Robikki tanneries. This will require a significant reduction in the number of tanneries through the relocation process. The original project specification addressed this issue by allocating 16 of the 29 “standard” tanneries to be “segregated” with different stages in the production process to be operated as separate tanning businesses within the same integrated unit. Under Phase 1, 5 of the 14 tannery facilities were allocated to this category, supporting the establishment of 44 tanning businesses. Under this approach there would be a total of 53 tanning businesses under Phase 1; 9 complete tanneries with single owners; and 44 segregated tanneries.

The IMC TECH. Report indicates the size distribution of tanneries during Phase 1 to be:

	FLOORSPACE AREA			TOTAL
	300 – 650 m ²	1,200 – 4,000 m ²	6,000 – 8,500 m ²	
Number of tanneries	21	12	11	44

It is not clear whether the different sizes of tanneries will be established as stand-alone units, or as integrated tanneries, as was the original proposal.

We have significant concerns about the way the segregated tanneries will operate based on the overall strategic objective of modernisation. It will be difficult to assure product quality with the overall production process passing through up to 22 separate tannery businesses.

The recommended alternative approach is to form groups of tanneries that will co-operate together to establish the new Robikki tanneries. This approach is preferred as it provides the basis of modernising all stages in the production process of finished leather to achieving the highest quality standards.

Funding The Robikki Project

Infrastructure The IMC TECH. Report indicates the costs of implementing the Robikki Infrastructure Project at EGP 863 mn, for all three phases, with a break-down of costs provided only for Phase 1. Our understanding of the funding of these costs is:

PHASE	GOE	ITALIAN GOVERNMENT	TANNERIES	TOTAL
1	15.0	158.0	139.0	312.0
2	176.5	-	176.5	353.0
3	99.0		99.0	198.0
Total	290.5	158.0	414.5	863.0

The percentage sourcing of funding across the three phases is:

PHASE	% FROM GOE	% FROM ITALIAN GOVERNMENT	% FROM TANNERIES	TOTAL
1	4.8	50.6	44.6	100.0
2	50.0	-	50.0	100.0
3	50.0		50.0	100.0
Total	33.7	18.3	48.0	863.0

The tanneries will meet the largest share of the infrastructure costs at 48.0%, with GoE accounting for 33.7%; and a grant from the Italian Government covering 18.3%.

Tanneries The costs that will be incurred by each tannery, based on a “standard” unit with annual production capacity of 7.8 mn sq ft, are:

- Land at EGP 30 per m²; 14,400 m² required; cost EGP 0.432 mn.
- Share of infrastructure costs as indicated above, with the costs being: EGP 9.9 mn during Phase 1; EGP 22.1 mn during Phase 2; and EGP 11.0 mn during Phase 3.
- Finishing the tannery shells, estimated to cost EGP 750 per m² of floorspace; 6,460 m²; cost EGP 4.845 mn.
- Equipping an integrated tannery; all equipment is new; cost EGP 15.576 mn.

The overall costs to the tanneries will be:

In EGP mns

PHASE	LAND PURCHASE	INFRASTRUCT. SHARE	FINISHING TANNERY SHELLS	EQUIPMENT PURCHASE	TOTAL
1	6.048	139.0	67.83	218.064	430.942
2	3.456	176.5	38.76	124.608	343.324
3	3.888	99.0	43.605	140.184	286.677
Total	13.392	414.5	150.195	482.856	1,060.943

The cost for each tannery facility will be:

In EGP mns

PHASE	LAND PURCHASE	INFRASTRUCT. SHARE	FINISHING TANNERY SHELLS	EQUIPMENT PURCHASE	TOTAL
1	0.432	9.928	4.845	15.576	30.781
2	0.432	22.062	4.845	15.576	42.915
3	0.432	11.000	4.845	15.576	31.853

Loans As indicated above NIB is due to become one of the shareholders in the new implementation company and to act as the main source of loans for the tanneries with the repayment terms: 13% rate of interest; 40% repaid up to completion of tannery shell, which is scheduled to take three and a quarter years; the remaining 60% to be repaid over a further three years.

Comments

- The costs of the new tanneries should be the same across all three phases.
- The proportion of the total project costs to be met by the tanneries across all three phases is too high, at 70%, see table overleaf. This comment applies equally to Phase 1 where the tanneries will meet 71.4% of the costs.

PHASE	GOE		ITALIAN GOVERNMENT		TANNERIES		TOTAL	
	Cost	% Share	Cost	% Share	Cost	% Share	Cost	% Share
1	15.0	2.5	158.0	26.2	430.942	71.4	603.942	100.0
2	176.5	34.0	-	-	343.324	66.0	519.824	100.0
3	99.0	25.7	-	-	286.677	74.3	385.677	100.0
Total	290.5	19.2	158.0	10.5	1,060.943	70.3	1,509.443	100.0

- The repayment terms to be applied by NIB are unattractive and tanneries that enter such loan agreements based on the above costings will struggle to survive.

- The costings used by IMC TECH. need to be thoroughly reviewed to identify where savings can be achieved, with the review to concentrate initially on Phase 1.
- Alternative sources of funding should be pursued, with specific proposals being:
 - The World Bank Global Environmental Fund to finance the also part of sludge treatment facility.
 - Export Development Bank Of Egypt which has three credit lines that provide more attractive repayment terms.
 - European Investment Bank if a number of tanneries can be combined to submit a joint application.
 - Credit guarantee schemes directed as equipment purchases that are in the process of being established through the IMC.
 - Italian Government credit guarantee scheme to purchase Italian equipment.
 - If equity participation will be accepted to approach either Actis, the recently announced Concorde private equity fund, or other such funds as they become operational.
- There should be a re-negotiation of the costs and funding of relocating the tanneries to Robikki before any tanneries sign any contractual commitments.
- A period of six months should be allowed for the tanneries to undertake a detailed review of the Robikki Project to identify changes to minimise the costs and risk to the new Robikki tanneries.
- Innovative funding proposals are provided on how to reduce the costs to the tanneries and at the same time to use the land value with the site at Magra El-Eion to set-up a funding scheme that could provide loans to the new Robikki tanneries on preferential terms.

5.1 Tanning Sector Overview

Background

The review of production capacity starts with an assessment of raw material supply as this is one of the key determinants of the level of production capacity throughout Egypt's Tanneries Sector. The level of production capacity within the Magra El-Eion area is presented alongside the capacity that exists in other areas of Egypt, with the second largest concentration being in Alexandria. The future of these other tanneries should be taken into account in specifying the Robikki Project, but the focus of the original ASSOMAC study and this study has been on the tanneries located in the Magra El-Eion area. This explains the reason for us recommending an urgent, and thorough, assessment of production capacities throughout Egypt's Tanneries Sector to ensure that decisions relating to Robikki are based on the current situation in the whole of Egypt's Tanneries Sector.

In this section a number of scenarios are presented for how developments elsewhere in Egypt (outside the Magra El-Eion area) will impact on the scale of the Robikki Project.

Supply Of Raw Hides And Skins

There are two possible sources of raw hides and skins:

- Domestically slaughtered animals, which in Egypt includes: bovine, cow, buffalo and buffalo calves; ovine, goats and sheep; and camel, where the animals are either reared domestically, or imported live.
- Imported raw hides and skins.

Strategic Supply

Egypt's Tanneries Sector has a potential competitive advantage due to:

- The relatively high number and proportion of cows and buffalo within the overall animal population, which are higher than other North African countries.
- The high quality of the raw hides sourced domestically which can be processed into high quality finished leather.

The above are supply side advantages that need to be converted into production and sales performance to benefit Egypt's economy.

Strategic Objective

The strategic objective for Egypt's Tanneries Sector is to convert its supply side competitive advantage into a market advantage by processing the maximum proportion of domestically sourced hides and skins into high quality finished leather which is sold domestically and in export markets. Pursuing this strategic objective will ensure the maximum level of added-value is achieved within Egypt from the domestic raw material supply.

Domestic Supply

The following table has been prepared based on the domestic animal slaughter information provided to us by the CLT. Their figures are based on the number of animals, which has been converted into square feet to be comparable with production capacity data used later in this section.

		In sq ft mns						
ANIMAL	ASSUMPTIONS ¹		1998	1999	2000	2001	2002	2003
Bovine:								
Cow	40 sq ft	50:50	58.4	59.3	63.7	60.6	62.0	67.2
Buffalo	2 sq ft	50:50	30.3	24.8	25.2	29.2	33.0	36.3
Buffalo Calf	3 sq ft	40:60	13.4	9.9	9.6	10.3	11.2	12.4
Total Bovine			102.1	94.0	98.6	100.1	106.2	115.9
Ovine:								
Goats	sq ft	20:80	42.9	0.5	0.4	0.4	0.4	0.4
Sheep	8 sq ft	20:80	19.6	18.6	17.0	16.7	16.6	15.9
Total Ovine			62.5	19.1	17.4	17.1	17.0	16.3
Camels	4 sq ft	40:60	12.8	13.6	12.0	12.8	11.3	9.6
Overall Total			177.4	126.7	128.0	130.0	134.5	141.8

¹ The first assumption against each animal type is the average area of the hide and skin in square feet. The second assumption is the proportion of the animals that are slaughtered in slaughterhouses, and therefore accurately recorded and the proportion that are slaughtered in outside slaughterhouses, where the figure is more of an estimate.

Based on the above domestic supply of raw hides and skins was 142 mn sq ft in 2003. It should be noted that the above figures include the import of live animals slaughtered in Egypt. We have two issues with the above results:

- Over half of the level of supply is assumed, during 2003 the assumed level is 55%.
- The level of goats being slaughtered annually appears low and this is likely to under-represent the supply of raw goat skins.

Our second source of supply information is FAO which are provided also for 2003 in the table overleaf. A comparison is provided between the FAO figures and those obtained through CLT.

ANIMAL	FAO 2003 FIGURES	CLT 2003 FIGURES
Bovine:		
Cow	60.0	67.2
Buffalo	36.4	36.3
Buffalo Calf	9.8	12.4
Total Bovine	106.2	115.9
Ovine:		
Goats	11.6	0.4
Sheep	21.6	15.9
Total Ovine	33.2	16.3
Camels	11.0	9.6
Overall Total	150.4	141.8

The FAO figures are comparable to the results based on CLT's figures. The main difference is that FAO's supply of raw goat skins is more realistic. Based on the above we have taken the level of domestic supply to have been 150 mn sq ft in 2003.

Imports

The level of imports of raw hides and skins have been obtained from the National Information Centre (NIC), but the figures are expressed as values. The assumptions that have been used to convert the values into square feet are provided in the second and third columns of the table:

			In Sq Ft mns				
ANIMAL	ASSUMPTIONS ¹		1999	2000	2001	2002	2003
Bovine:							
Cow	40 sq ft	EGP	0.018	0.390	0.725	0.663	0.196
Buffalo	42 sq	250					
Buffalo Calf	13 sq		-	-	-	-	-
Total Bovine			0.018	0.390	0.725	0.663	0.196
Ovine:							
Goats	4 sq	EGP 30	-	-	-	-	0.0003
Sheep	8 sq ft	EGP 40	0.010	0.225	0.102	-	-
Total Ovine			0.010	0.225	0.102	-	0.0003
Camels	44 sq		-	-	-	-	-
Overall Total			0.028	0.615	0.827	0.663	0.1963
% Domestic Supply ²			0.02	0.48	0.64	0.49	0.14

¹ The first assumption against each animal type is the average area of the hide and skin in square feet.

The second assumption is the average cost of each imported hide or skin.

² Expressed as a percentage of the domestic supply results using CLT's data.

During each of the last 5 years the level of imports of raw hides and skins has been under 1% of the level of domestic supply. Imports have therefore had an insignificant impact on the total level of supply of raw hides and skins for Egypt's tanneries. Egypt's Tanneries Sector does not have a recent history of importing its raw hides and skins and has been able to operate up to now without relying on imports.

Total Supply

The total supply of raw hides and skins to Egypt's tanneries was 150 mn sq ft during 2003.

Imports To Increase Supply

During the period of this assignment we have been informed that the level of supply of raw hides and skins could be increased by importing from neighbouring countries. We have considered this proposal, but have concluded it should not form the basis of long-term planning of Egypt's Tanneries Sector, for three main reasons:

- Each developing country views its indigenous tanneries sector as providing development potential, with the objective of processing the maximum level of raw hides and skins in domestic tanneries. Even if an imported supply can be secured in the short-term, there will be no guarantee that it will be continued in the medium or longer-term.
- The focus for Egypt's Tanneries Sector should be to add maximum value to the existing domestic raw material supply, rather than increasing the supply further. This relates to the achievement of the strategic objective which was stated earlier.
- Over the last six months there has been media reports of Egypt having to import increasing quantities of meat. The main reason for this is reported to be a reduction in the level of fodder being grown to feed livestock, with a consequent reduction in the number of animals under husbandry and being put to slaughter. This has pushed-up the price of domestically slaughtered meat, with plans to import large quantities of cheaper meat from Sudan, as an example.

Based on the above, no imported hides and skins have been included in the projection of raw material supply that will be available to Egypt's Tanneries Sector. The reason for emphasising this point is the projections of raw material supply that are used to specify the scale of production capacity to be constructed at Robikki. It is our view that such specification should not rely on an assumption of imported raw material.

If Egypt's Tanneries Sector can develop strongly and achieve increasing levels of domestic added-value, it may be possible to start importing wet blue from neighbouring countries.

Future Domestic Supply

Based on our analysis of CLT's figures the level of domestic supply has increased by 12% over 5 years, representing an annual rate of increase of 2.4%. If it is assumed that this rate of increase of domestic supply continues, the level of supply will reach 194.7 mn sq ft a year by 2014.

It should be noted that during CLT's 2004 General Assembly meeting it was stated that the level of supply has been falling over the last few years. One of the reasons for this statement could be accusations between tanneries of raw hides being exported under the guise of being wet blue. Further reasons could be: declining domestic animal population (see above); declining domestic slaughter rate; increased imports of meat into Egypt; or any combination of these. Over the last two months there have been a number of newspaper articles on the level of Egypt's meat imports, which are indicated to be 375,000 tonnes a year and the opening-up of new sources of imports. In particular, Sudan has been mentioned based on an agreement to import 20 – 30,000 tonnes, with India also mentioned as a possibility. The higher the proportion of domestically consumed meat that is imported already slaughtered, the lower will be the availability of domestically sourced raw hides and skins. This situation needs to be kept under continuous review to determine if the projected further increases in domestic raw material supply will happen, or whether there will be flattening-off of supply, and possibly a decline. Any reduction in the growth rate of raw material supply below 2.4% a year will require a reduction in the planned production capacity to be constructed at Robikki. This situation needs to be kept under continuous review.

If there is a move to import increasing quantities of meat from East Africa, this could be linked with an initiative to import the hides alongside the meat. Such an initiative, though, should be implemented on the basis that its purpose is to maintain existing levels of raw material supply, rather than to increase the level of supply.

Selected Production Capacity

The table at the end of this section provides the detailed results of our review of production capacity throughout Egypt. We have used two sources of information to prepare the detailed table:

- An official source of production capacities, with figures provided for 1970 and 2003.
- The results of our research and interviews with tannery owners.

The results are summarised in the following table:

LOCATION	SAME SOURCE ¹		INTERVIEWS ²		TOTAL	
	Capacity In Sq Ft	No. Tannery Businesses	Capacity In Sq Ft	No. Tannery Businesses	Capacity In Sq Ft	No. Tannery Businesses
Cairo	79.5	42	42.0	18	121.5	60
Techno			15.6	1	15.6	1
Quesna ³	24.0	1			24.0	1
Fayoum	3.5	5			3.5	5
Alexandria	21.4	12	12.0	1	33.4	13
Others	14.0	4			14.0	4
Total	142.4	64	69.6	20	212.0	84

¹ This is an official source which agreed to provide us with statistics on the basis that its identity is not revealed.

² These results are based on our own interviews with tannery businesses.

³ This tannery was covered by both approaches to identifying production capacities, with 22.0 mn sq ft identified under the “same source” approach and 33.0 mn sq ft identified through our own interviews and research. This tannery is therefore reported twice with the difference of + 11.0 mn sq ft reported under the interviews columns.

Out of the 84 tanneries covered by our review activity, 64 (76%) have production capacities indicated by the official source. The total production capacity of 212 mn sq ft is divided 121.5 mn sq ft in Magra El-Eion (57%) and 90.5 mn sq ft outside Magra El-Eion.(43%).

The official source of information used in the preparation of the table at the end of this section, provides a historic comparison over a period of 30 years. Based on the 66 cases where direct comparisons are possible, private tanneries have increased their production capacity from 5.5 to 142.3 mn sq ft, with the largest increase being at the Piele Color Tannery (referred to herein as the Quesna tannery), which increased from 50,000 sq ft to an officially recorded production capacity of 24,000,000 sq ft.

The above results represent only a proportion of the total number of tanneries in Egypt, but they are used as the basis to calculate overall national production capacity.

Overall National Production Capacity

Three approaches are used to calculate overall national production capacity:

1. Size categories in Magra El-Eion where the ToR indicates the total number of Tanneries, by category.
2. Individual large tanneries, outside Magra El-Eion, where their specific production capacity is known.

3. Estimations of additional production capacity in areas where the two above approaches, even when combined, cover only a proportion of the total number of tanneries.

Techno This tannery was constructed in the early 1990s and is located in Salheya. It is not clear if the owner operated the facility, or not. If it did operate, it was for a relatively short period. For about 10 years the facility lay idle, and is effectively now owned by banks. During the last six months Mr. Walid Soliman has leased the facility and started production, but our understanding is that currently only half of the production capacity is being used. The tannery claims to have orders to produce finished leather for Mercedes Benz to be used in car seats, but cannot fulfil the orders due to a lack of cash to purchase the raw material and finance the production cycle. The annual production capacity is 15.6 mn sq ft.

Quesna Throughout Egypt's tanneries sector the "Quesna" tannery, established by Mr. Hesham Gazzat is recognised to be having a significant impact on the sector. It is currently Egypt's largest tanning unit and it has been reported to us that it is operating at full capacity. From our official source of information, this facility has capacity of 24 mn sq ft a year. It has been reported to us that this tannery is being supplied with 1,500 to 2,000 hides per day, which is also indicated to represent about a third of the national supply.

Fayoum These official source indicates five tanneries with production capacity of 3.5 mn sq ft. We estimate the total production capacity at Fayoum, and it surrounding area to be 4.5 mn sq ft.

Alexandria Has the second largest concentration of tanneries outside Magra El-Eion. One of the key local players indicated to us that there are 21 tanneries, with 13 covered by our assessment of production capacity above. The production capacity of the 13 tanneries covered by our review activity is 33.4 mn sq ft. We estimate total annual production capacity of 40 mn sq ft.

Egypt's remaining public enterprise tannery – El Nasr Tanning Co. – is based in the tanning area. This company had four tanneries: Main Centre; Modern; United Chrome; and United Vegetable which have been offered for sale by the Chemical Industries Holding Company. So far the Main Centre tannery, which includes a shoe manufacturing facility, has been sold to the owner of a tannery from Magra El-Eion.

The most significant issue for the Alexandria tanneries has been the lack of a waste water treatment facility. Canada's aid programme (CEDA) financed the preparation of a feasibility study into establishing such wastewater treatment facility, but has since decided not to progress the project any further. Recent announcements on new multi and bi-lateral environmental funds, including the European Investment Bank (EIB) could provide access to funding to have a facility constructed. Having a wastewater treatment facility is fundamental for the Alexandria tanneries to have long-term future in their existing location.

Others Various tanneries that can be identified in the table at the end of this section have annual production capacities of 14.0 mn sq ft. We estimate the total of “other” annual tanning production capacity to be 18.0 mn sq ft.

Basateen During our review activity we have discovered that the former facilities of The Egyptian Leather Co., at Basateen, have been sold to a number of existing tannery owners from Magra El-Eion and a group of individuals with property interests. A condition of sale is that the facilities must continue to be used as tanneries. It is our understanding that buildings that were previously used as leather goods factories, stores and warehouses have been purchased to be operated as tanneries. If all of the facilities at Basateen are used to produce tanned leather the total production capacity will be about 190 mn sq ft. It should be noted that the design capacity of the wastewater treatment facility for the original company was to service 80 mn sq ft of annual production.

Total Production Capacity Estimates of total tanneries production capacity, throughout Egypt’s Tanneries Sector, are:

LOCATION	ESTIMATED PRODUCTION CAPACITY IN MN SQ FT
Magra El-Eion	292.7
Questa	24.0
Techno	15.6
Alexandria	40.0
Fayoum	4.5
Others	18.0
Basateen	190.0
Overall Total	584.8

We estimate the total national tanneries production capacity to be 584.8 mn sq ft, of which 50.0% is located in Magra El-Eion; 32.5% at Basateen and 17.5% in other parts of Egypt. The Robikki Project, which has been prepared for the tanneries located in the Magra El-Eion area covers only 50% of the production capacity within Egypt’s Tanneries Sector.

Excess Production Capacity

There is currently excess production capacity over the level of raw material supply of 427.5 mn sq ft (272%). To put this point another way, the sector as a whole is operating at an average production capacity utilisation rate of 26%.

We accept the levels of production capacity utilisation may be higher in Magra El-Eion than elsewhere in Egypt, but even if all of the domestic raw material supply is being processed at Magra El-Eion, (which we know is not the case), it will only achieve 52.5% production capacity utilisation.

Such low levels of production capacity utilisation are not currently a significant problem, as the majority of Egypt’s tanned leather production capacity is in older workshop type tanneries which have low overhead and operating costs. In this situation, the tanneries can be profitable at low levels of production

capacity utilisation. The fact that much of the production capacity lies idle is an inconvenience to its owners, but for most is not causing trading losses.

Excess Production Capacity Within Modernisation

The significance of the excess production capacity will become of increasing importance as tanneries start to modernise. A modernised tannery will have to operate at much higher levels of production capacity utilisation to break-even; we estimate over 75%. As of now the Magra El-Eion tanneries have a strong position in securing raw material supply as they can offer high prices to obtain their raw material, as their other costs are low. Following relocating to Robikki, and starting to operate from modern facilities, their cost base will be higher for the following reasons:

- increased depreciation charges for the buildings and equipment;
- higher finance charges due to the need to repay loans taken-out to fund the establishment of the new tanneries;
- higher operating costs due to:
 - not paying for use of water in Magra El-Eion, which will only be available at Robikki through paying the going rate;
 - not paying any environmental costs as of now, with charges per m³ to be imposed at Robikki;
 - costs of transporting workers on a daily basis to and from Robikki.

We are concerned that following relocating to Robikki the increase in the cost base of the tanneries will be such that they will no longer be able to offer as high prices to secure their raw material supply. If our concerns are accepted the outcome will either be:

- the modernised tanneries will not be able to secure sufficient raw material supplies to achieve the break-even level of production capacity utilisation;
- or, the modernised tanneries pay too high prices to secure their raw material supplies and incur losses on every production run.

The consequence of either of the above will be accumulated losses at the modernised tanneries, which is likely to result in their failure within a 2 – 3 year period. A further consequence will be that some of the workshop tanneries that are currently experiencing low production capacity utilisation may be able to take production activity away from the modern tanneries at Robikki, as they will be able to pay higher prices to secure the raw material. If this happens it would be a significant backward step to achieve the modernisation of the sector.

Techno Tannery

The Techno Tannery (see above) provides an example of how this situation happens in the real world. This is one of only two modern tannery units in Egypt that can operate to international standards throughout its production process. Soon after starting its operations it ran into financial difficulties and was forced to close as it could not repay its bank loans. This modern facility is currently being rented from the bank, but only operates on a jobbing basis, re-working hides from Magra El-Eion that have faults in their wet blue stage of production. This tannery has orders from Mercedes in Germany to supply upholstery finished leather for cars that it cannot fulfil due to not being able to secure raw material. We are also aware of attempts to modernise parts of national tanneries sectors in Greece and Turkey that have resulted in tanneries closing due to a lack of attention to the impact of cost increases within the dynamics of domestic raw material supply.

Production Capacity In Context

We have the following comments on the situation of the excess production capacity:

- The existing high level of excess production capacity needs to be viewed within the context of modernising the Magra El-Eion tanneries and the sector as a whole.
- Achieving the successful modernisation of either the Magra El-Eion tanneries, or the sector as a whole, requires the planned production capacity to be matched with the current and projected level of raw material supply. The reasons for not relying on imported raw hides and skins have already been explained earlier in this section.
- Domestic raw material supply is projected to be 194.7 mn sq ft in 2014 (see earlier in this section) and it is recommended this should provide the starting-point for planning the level of production capacity in the sector as a whole. To provide contingency production capacity we propose that Egypt's Tanneries Sector should have 225 mn sq ft of production capacity in 2014. This situation, though, should be kept under continuous review as earlier in this section it was explained that the growth in domestic supply may start to slow-down and the level of supply could start to decrease. Any reduction in the projected annual growth rate of 2.4% a year in the domestic supply of raw hides and skins should result in a proportionate reduction in the projected production capacity of the sector as a whole.
- A sector priority should be set to ensure the two existing modern tanneries will receive their required level of raw material. As they have combined production capacity of 39.6 mn sq ft, this needs to be

deducted from the total size of the sector to indicate that the remaining target total capacity should be 185.4 mn sq ft in 2014.

- With a maximum level of national production capacity, of 185.4 mn sq ft, excluding the two existing modern tanneries, there is a requirement to down-size the remainder of the sector and the scale of production associated with the Robikki Project, which on its own is indicated to be 248.1 mn sq ft, in the next section.
- A key issue to determine the planned production capacity at Robikki is to decide the future of the tanneries that are located outside Magra El-Eion. It is proposed that a key criteria in reaching such decisions should be that within a timescale of between 5 and 7 years, all tanneries in Egypt must be connected to a wastewater treatment facility. Achieving this situation will inevitably result in concentrating Egypt's Tanneries Sector in one, or two, locations (excluding the two existing modern tanneries, due to the cost of establishing and operating such facilities. Under such an approach the key issue is whether there will continue to be a centre of tanning at Alexandria to operate alongside the main centre at Robikki. In this context the following options exist:
 - The tanneries in Alexandria are modernised as an alternative centre to Robikki, based on the provision of a new wastewater treatment facility, either in their existing location, or at a new site in an industrial zone outside Alexandria.
 - A planned approach to closing the tanneries that cannot meet Egypt's environmental standards is implemented, which will apply to all of the remaining tanneries outside Magra El-Eion and Alexandria, with the affected tanneries having the option of becoming part of the either the Robikki, or Alexandria, centres of tanning activity.
 - There is no planned approach to modernise, or close, the older tanneries and they continue to operate.
- The above options result in a number of scenarios for the future of Egypt's Tanneries Sector, with each having significant implications for the Robikki Project:
 - **Scenario 1** – a new modern tanneries cluster is established at Alexandria, with down-sized production capacity of 25 mn sq ft, with all of the other older tanneries being closed. This scenario would result in the Robikki Project having production capacity of 160.4 mn sq ft.
 - **Scenario 2** – no new modern tanneries cluster at Alexandria, with all of the older tanneries being closed. Under this

scenario the Robikki Project would have production capacity of 185.4 mn sq ft.

- **Scenario 3** - the older tanneries outside Magra El-Eion are allowed to continue to operate; together they represent production capacity of 62.5 mn sq ft. Under this third scenario the Robikki Project would have production capacity of 122.9 mn sq ft.
- As of now the planned down-sizing of Magra El-Eion is from 292.7 to 248.1 mn sq ft, representing a reduction of 15.2%. The actual level of down-sizing will depend on whether the tanneries outside Magra El-Eion are to be taken into account in making the down-sizing calculation. We have been requested to comment on the fairness of the current proposals. In this context we make the following comments in relation to the above three scenarios:
 - Scenario 1 – the production capacities of the older tanneries, not in Alexandria, are taken into account alongside the tanneries in Magra El-Eion. Under this scenario the level of downsizing would be to reduce the current level of 315.2 mn sq ft (Magra El-Eion; Fayoum; and others) to 160.4 mn sq ft at Robikki, representing a 49% reduction.
 - Scenario 2 – the production capacities of all of the older tanneries outside Magra El-Eion are taken into account alongside the tanneries in Magra El-Eion. Under this scenario the level of down-sizing would be to reduce the current level of 355.2 mn sq ft (Magra El-Eion; Alexandria; Fayoum; and others) to 185.4 mn sq ft, representing a 48% reduction.
 - Scenario 3 – under this scenario all of the required downsizing falls on the Magra El-Eion tanneries, with them having to contract from 292.7 to 122.9 mn sq ft, representing a 58% reduction.

Raw Hide And Skins Supply

You will see from the notes that importing raw hides is becoming increasingly important. This is supported by the trade balance data we obtained from the National Information Centre, see the following table:

	VALUE OF IMPORTS IN EGP MNS		QUANTITY OF IMPORTS IN NUMBER ²	
	2004	FYE Projection 2005 ¹	2004	FYE Projection ¹ 2005
Imports	2.063	4.813	116,114	349,319
Exports	1.506	0.049	170,471	4,885
Balance	(0.557)	(4.764)	+54,357	(344,434)

¹ Based on results for the 1st nine months of 2005. The FYE projections should therefore be relatively accurate.

² It is not clear if this is the number of hides / skins or their area in sq ft. The column heading states no. of units, but in the product description is indicates sq ft. This will have to be checked.

The full year equivalent projection of imports for 2005 is EGP 4.813 mn in value and 349,319 hides and skins by number. This represents a projected 133.3% increase in value over 2004 and projected 200.8% increase in the quantity of hides. The trade balance is projected to worsen in value from a negative EGP 0.6 mn in 2004 to EGP 4.8 mn for 2005. Not only have imports increased substantially, but the exports of raw hides and skins have collapsed from 170,471 quantity in 2004 to a projected 4,885 for 2005. The quantitative trade balance is projected to move from a positive of 54,357 hides and skins in 2004 to a negative 344,434 for 2005. This represents a year-on-year projected increase of 398,791 hides and skins available to be processed in Egypt during 2005 compared to 2005.

The above results support the outcome of the interviews that 2005 has been a significant year of change in the supply of raw hides and skins to the tanneries.

A more detailed assessment of the imports of raw hides and skins are provided in tables at the end of this note. Although these are official statistics there are a number of problems with the figures which will have to be checked, namely:

- Raw Skins of Sheep or Lambs Without Wool – 2nd product area - 2005 – imports from Lebanon – imports with a value of EGP 551,526, for 1,900 skins gives a value per unit of EGP 290.28, which cannot be correct.

- Skins, Hides of Bovine Animals, Otherwise Preserved – 8th product area - 2004 – imports from Jordan – imports with a value of EGP 483,559, for 600 hides gives a value per unit of EGP 805.93, which cannot be correct.
- Skins, Hides of Bovine Animals, Wet Salted – 1st product area, where the average value of the imported hides during 2004 was EGP 69.2, but during 2005 this has fallen to EGP 13.2.

Nevertheless, it is possible to draw the following conclusions from the tables:

- Imports of raw hides dominate import values accounting for 84.4% during 2004, falling to 67.1% during the first nine months of 2005.
- Imports of all types of hides and skins are increasing.
- Imports of sheep / lamb, goats and equine animals are all increasing, which may indicate that the squeezing of domestic supplies of these skins is reflecting a process that started earlier with hides.
- The only product area where it is possible to undertake a specific comparison between 2004 and 2005 is in goat skins, with Sudan being the only supplier over the two years. In this case the average value of the imported skins have increased from EGP 5.6 in 2004 to EGP 10.0 during the first nine months of 2005.
- In all of the other product areas there is no consistency of sourcing country between 2004 and 2005. It is not possible to indicate whether the changes are due to the Egyptian tanners “shopping around”, or it is caused by competitive pressures within these countries, or the drying-up of their domestic supplies. Whatever the reason the supply chains into Egypt appear to be fragile.

The analysis in this note provides background evidence of a significant change in the supply conditions of raw hides and skins into Egypt’s Tanneries Sector, as a whole, and in particular into the Magra El-Eion tanneries. It appears that the 2.4% average annual increase in supply that was indicated in our report has stopped and domestic supply may be decreasing. We did predict this situation in our report and the situation needs to be kept under continuous review. The key impacts that there may have been on the domestic supply situation are:

- Reduction in the level of imported live animals into Egypt, which are slaughtered here. We can check this point through trade figures in live animals going back to the late 1990s.
- Increasing levels of production at the Bill Calor tannery at Quesna, which is reported to be taking between 25 – 33% of the domestic supply of raw hides. We need to be able to check this situation, but

also to assess whether there may be a similar impact on sheep / goat skins through the operation of the new tanneries at Basateen.

- Reduction in the domestic animal population and consequent reduction in the level of slaughtering domestically reared animals. It is expected that this has affected bovine animals more than ovine. We are still trying to obtain figures through the Ministry of Agriculture, but it is not easy. Let us hope we make some progress over the next couple of weeks. We could ask IMC (Technical) and / or IMC (Development) to help.
- Increase in the level of imported hides and skins as reported in this note. By the end of February it should be able to obtain trade results for the whole of 2005, which will enable us to undertake a more thorough assessment and comparison to 2004, not involving any full year equivalent projections. These assessments need to be continued on a quarterly basis during 2006 and 2007 to determine the trends.

Regarding the imports of raw hides and skins I suggest we need to agree a strategic position on how the availability of imported hides and skins will impact on the scale of production to be planned for Robikki. From DOL's side we have consistently argued that imports should not be included in the calculation of domestic availability as their supply is subject to international market conditions and can dry-up as quickly as being turned-on. Having a common position on this will be essential as I am becoming increasingly convinced that the level of domestic supply is becoming increasingly tight.

Imports Of Raw Hides And Skins 2004 And 2005: By Type And Source Country

Type And Country	2004		2005 1 st Nine Months		2005 FYE Projection		Change 2005 FYE To 2004	
	Value In EGP	Quantity	Value In EGP	Quantity	Value In EGP	Quantity	Value In EGP	Quantity
1. Skins, Hides of Bovine Animals, Wet Salted – Code 4101210000								
Syria	-	-	743,551	11,084	991,401	14,779	+991,401	+14,779
South Korea	-	-	244,250	24,425	325,667	32,567	+325,667	+32,567
Sudan	-	-	178,070	26,334	237,427	35,112	+237,427	+35,112
Senegal	-	-	145,548	20,000	194,064	26,667	+194,064	+26,667
Jordan	-	-	102,275	25,000	136,367	33,333	+136,367	+33,333
Lebanon	173,132	2,500	-	-	-	-	(173,132)	(2,500)
Total	173,132	2,500	1,413,694	106,843	1,884,925	142,457	+1,711,793	+139,957
2. Raw Skins of Sheep or Lambs Without Wool – Code 4102290000								
Lebanon ¹	-	-	551,526	1,900	735,368	2,533	+735,368	+2,533
Total	-	-	551,526	1,900	735,368	2,533	+735,368	+2,533
3. Hides of Equine Animals Preserved not Tanned – Code 4101400000								
Italy	-	-	185,966	500	247,955	667	+247,955	+667
Lebanon	-	-	151,887	500	202,516	667	+202,516	+667
Total			337,853	1,000	450,471	1,333	+450,471	+1,333
4. Skins Whole of Bovine Salted Dry or Fresh - Code 4101100000								
South Korea	-	-	255,513	6,724	340,684	8,965	+340,684	+8,965
Iraq	-	-	240,000	58,000	320,000	77,333	+320,000	+77,333
Spain	-	-	101,575	2,673	135,433	3,564	+135,433	+3,564
Jordan	-	-	82,000	1,640	109,333	2,187	+109,333	+2,187
Syria	493,300	8,840	-	-	-	-	(493,300)	(8,840)
Lebanon	66,831	1,758	-	-	-	-	(66,831)	(1,758)
Total	560,131	10,598	679,088	69,037	905,451	92,049	+345,320	+81,451

Type And Country	2004		2005 1 st Nine Months		2005 FYE Projection		Change 2005 FYE To 2004	
	Value In EGP	Quantity	Value In EGP	Quantity	Value In EGP	Quantity	Value In EGP	Quantity
5. Skins, Raw Hides other Preserved not Tanned – Code 4103900000								
UAE	-	-	64,280	6,428	85,707	8,571	+85,707	+8,571
Total	-	-	64,280	6,428	85,707	8,571	+85,707	+8,571
6. Other Raw Skins, Hides of Goats not Tanned – Code 4103100000								
Sudan	179,064	32,000	223,813	22,381	298,417	29,841	+119,353	(2,159)
Total	179,064	32,000	223,813	22,381	298,417	29,841	+119,353	(2,159)
7. Raw Skins of Sheep or Lambs, with Wool – Code 410210000								
Saudi Arabia	124,626	24,720	-	-	-	-	(124,626)	(24,720)
Total	124,626	24,720	-	-	-	-	(124,626)	(24,720)
8. Skins, Hides of Bovine Animals, Otherwise Preserved – Code 4101300000								
Jordan ²	483,559	600	242,000	52,000	322,667	69,333	(160,892)	+68,733
Iraq	-	-	97,588	2,400	130,117	3,200	+130,117	+3,200
Syria	320,940	37,396	-	-	-	-	(320,940)	(37,396)
Tanzania	107,729	6,000	-	-	-	-	(107,729)	(6,000)
Total	912,228	43,996	339,588	54,400	452,784	72,533	(459,444)	+28,537
Overall Total	1,949,181	113,814	3,609,842	261,989	4,813,122	349,319	+2,863,941	+235,505

¹ There is something wrong with the figures for 2005: either the value figure is significantly over-stated; or the quantity figure is under-stated.

² There is something wrong with the figures for 2004: either the value figure is significantly over-stated; or the quantity figure is under-stated.

Type And Country	2004		2005 1 st Nine Months		2005 FYE Projection		Change 2005 FYE To 2004			
	Value In EGP	Quantity	Value In EGP	Quantity	Value In EGP	Quantity	Value In EGP	Quantity	% In Value	% In Quantity
Bovine	1,645,491	57,094	2,432,370	230,280	3,243,160	307,040	+1,597,669	+249,946	+97.1	+337.8
Sheep / Lam	124,626	24,720	551,526	1,900	735,368	2,533	+610,742	-22,187	+490.0	-89.8
Goats	179,064	32,000	223,813	22,831	298,417	29,841	+119,353	-2,159	+66.6	-6.7
Equine	-	-	337,853	1,000	450,471	1,333	+450,471	+1,333	∞	∞
Others	-	-	64,280	6,428	85,707	8,571	+85,707	+8,571	∞	∞

5.2 Compiled information Egyptian Footwear & Leather Products

Identified weakness

Exports of the sector over the past few years have been relatively flat at best and are down significantly from when there was government to government barter trade between Egypt and the former Soviet Union, when quality and costs were not an issue.

For footwear, the lack of forward styling and flow of trend information and the coordination of footwear components supply are major constraints to export. This is in addition to low production efficiency rates, the absence of accurate costing and not meeting international quality standards, present themselves as major constraints to expanding exports.

The costs and the quality of the leather supplied by Egyptian leather producers being inconsistent is also a major constraint to the competitiveness of Egyptian leather products.

Advantages

A willingness to accept minimum orders and short lead times from buyers. The exemption from quotas and duties in the EU markets. The close proximity to EU markets and the suppliers of components required for producing quality products for export.

General features of leather products including footwear

Sectors Involved and Background History

The leather products manufacture in Egypt is classified into the following three main sub-sectors:

footwear, leathergoods and leather garments.

Footwear represents 85 percent of the Egyptian industrial activities among the leather based industries with a total output estimated at 70 million pairs per annum applying both leather and man-made material. Leather goods and leather garments manufacture are estimated to represent about 15 percent of the sub-sector's manufacture.

In order to understand the current situation of the industry, it is necessary to review briefly stages of development over the last three decades. Before the 1970's, the industry operated at the handicraft level through small units mainly in Cairo and Alexandria. At the beginning of the 1970's, the industry witnessed the start of widespread business activities encouraged by trade agreements for exporting to the large USSR and other East-Europe markets.

At the end of the seventies, the market of Eastern Counties started to show a gradual shrinkage until it reached an almost complete cease. Meanwhile, transform to a market economy together with structural adjustments made it possible for imported goods to enter the formerly protected domestic market; thus putting the industry at a real challenge - after protection withdrawal. Meanwhile, customs duties on the imported footwear is currently 40 per cent in addition to 15 per cent added value and other expenses.

Footwear

At small-scale and cottage artisan levels, an old survey carried out in the late sixties by ARAC Consultants estimated the total number of workshops to be 6320 units which may not necessarily reflect the actual picture of the sector at the time due to the domination of informal sectors.

However, recent statistics on recognized footwear manufacturers at the same level reflect a drastic growth in the number of cottage manufacturers at some 19,000 workshops employing approximately 42,000 workers. Some experts have estimated that as much as 30-50 per cent of Egyptian economic activity is in the informal sector. Should this pattern apply to the leather based manufacture, a conservative estimate of the total workforce at this particular level would engage over 60,000 PMUple in the business.

The large-scale operations in the sector with an output over 1,000 pairs/day are limited to 5 factories producing sports shoes and mostly applying man-made material. These factories have been established with the involvement of foreign partners where -in some cases- the main interest has been the supply of sophisticated equipment rather than the transfer of technology and marketing partnership.

In the second rank, 25 modern medium scale factories have been established by pioneering footwear manufacturers by graduating their plants from small scale and cottage levels applying own experience and frequent limited advice whenever available. The daily output ranges from 200 - 1,200 pairs of leather shoes comprising low/medium and high priced footwear.

In this category, limited footwear components manufacturing takes place either for own factory consumption and/or supply to the cottage workshops- mainly unit soles, heels and unit insoles.

Modernization in the footwear manufacture has been introduced during the last two decades with the application of technologies at various levels of semi and full mechanization.

The cottage level of footwear manufacture has experienced a sudden switch from traditional hand crafted high quality shoes to a sort of mass production in order to meet the export boom demand as created in the sixties. This orientation, however, has induced a certain amount of production organization which was necessary to reach higher outputs at this level with no real concept of industrialization.

As a result, the quality was subject to continued deterioration against increased profitability being supported by buyer's acceptance, as well as, heavily protected domestic market. Consequently, the productivity output per worker has increased from a former level of 1-2 pairs/worker/day to some 10 pairs/worker/day a pattern which remains valid till today. Although this productivity could be comparable with that produced in the Far East, yet lower quality and finishing of even the cheap grades of shoes of Egyptian products are apparent.

Pressure created by the vast demand which appeared to continue at the time, together with fast profit making, both have encouraged the entrepreneurship in the sector to venture into a process of modernization by procurement of new equipment and establishing factories learning from trial and error.

By and large, attempts have not yet found a successful solution for the transformation from the cottage pattern towards mechanization. This is clearly demonstrated by the average productivity at semi or fully mechanized levels, as estimated at 4-5 pairs/worker/day vis-a-vis the world norms under comparable conditions giving 15 pairs/worker/day i.e. making Egyptian productivity 60-70 per cent lower. Thus the highly mechanized producers are at a disadvantage against the overseas efficient suppliers and the indigenous cottage manufactures; being competitors in both export and domestic markets

Accordingly, the sector features an unbalanced pattern of development at both cottage and mechanized levels where the situation at the latter appears to be crucial. This is diagnosed by the serious lack of balance between the brought in technology and the weak human infrastructure at management, middle management and operators' levels.

The lack of technical knowledge, standardization and coordination of the industrial activities have hampered trials for production of shoe components attempting an increased productivity to encounter operators' deficiencies. The absence of a practical business oriented group work by trade as well as a clearly defined development strategy where the private industry plays a collective key role would leave the sub-sector's challenges without solution. Thus the Chambre of Leather Industries is currently initiating a vital role in activating the sector and encouraging the lacking group work spirit.

In a recent development, a footwear training center has been established and is currently functioning with full involvement of the Industry Chambre- whose first practical attempt is imparting the necessary skills in shoe making technology and bridging the felt gap between its' competitors.

Leathergoods

Leathergoods manufacture is estimated to be undertaken by 700 units with a total workforce of about 15,000 employees at the cottage and small and medium scale levels- nationwide. Here it should be noted that the absence of accurate information on the sector is a major contributor to negative effects on development considerations.

However, the companies could be classified as follows according to their product line(s):

Belts, wallets & small leather goods	500 units
Ladies bags	80 units
Luggage & folders	120 units

The manufacture of modern type(s) of leather goods has its tradition in the country with Cairo and Alexandria being the main centre of the sub-sector's industrial and trading activities. Generally, the industry exists at small and medium scale levels where product lines follow the western styles as mainly orientated towards a certain class of the Egyptian society and foreigners living-in or visiting the country.

In this respect, the industry general orientation is directed towards the domestic market with three distinctive categories at the market outlets; i) product range with peculiarities adapted for the Egyptian consumer's taste as representing the bulk of displays, ii) seasonal product groups made for the Middle-East tourists and iii) a limited category coming-up to meet the western tourists demand as well as the class A domestic consumers. Among the three product categories, the latter represents the closest taste to the world market trends.

At production level, the pioneering generation, which started the business in the fifties, has gained extensive experience through close contacts with the West. During the late sixties and in the early seventies, the export boom to East-Europe, has brought sudden structural changes to the manufacturing pattern. The demand for large export orders of limited design range as well as a ban on the import of leather goods made the sector operate in isolation from world developments in both trends and manufacture. With the eventual closing down of the vocational training facilities in the trade, the workforce gained experience through inherited skills which was further deteriorated by reduced demand for modernization and quality, whether for domestic and/or export markets at the time.

Production management in general applies a typical pattern of small-scale enterprise where the owner assumes all functions including design selection and

even such production tasks as design and pattern making. The management has minimal role in manufacturing organization, where the work follows a piece rate system and consistency in quality is difficult to achieve.

Design abilities are limited to copying from catalogues and/or prototype samples offered by customers inducing limitations on design analysis and collection building tasks. Under the circumstances, the profession of leather goods designer does not exist and the factory owners according to their own judgment mainly undertake its duties.

With the exception of newly established and/or developed modern factories, the wide base of leather goods manufacture applies a range of outdated machines and equipment for the mechanized operations whilst lacking a wide range of appropriate hand tools as necessary for the perfection of the manual operations. The general tendency in piecework manufacture has its negative impact on the factories/production organization as well as the workers attitudes, which may be represented in low productivity, motivation and necessary elements of efficiency..

Material inputs particularly for leather, and other important components have suffered long isolation from the world technological and trend innovations. Under the dominating domestic market requirements, most of the leather material is heavily pigmented and/or embossed with a shining finish giving a hard texture and loosing the genuine feeling. Other inputs as accessories, and auxiliaries, that were imported, had locally made substitutes which are not in line with trendy innovations. However, new policies made it easier to import components providing appropriate sources and quality are known to the industry.

Leather Garments

Leather garments manufacture graduated from a tailoring business, which was activated during the sixties and the seventies for export to the East-European countries. This active export helped to set-up a number of factories on a medium scale level, however, they were oriented to low quality befitting the markets requirements. The sudden shrinkage of these markets has brought the businesses to a still situation which was followed recently by establishment of several factories mainly for the domestic and tourist markets as well as for the limited export markets.

There are 20 recognized factories operating at a medium and small-scale levels in addition to estimated 40 cottage manufacturers. The manufacture is highly dependent on the supply of garment leather being a large consumer to the leather material. Therefore the manufacture is based on the domestic supply for sheep & goatskins as well as buffalo calf leather, which would be partially available for conversion into garment leather, and eventually into finished garments.

Applied technology is limited mainly to sewing machines whilst components other than leathers are imported for the high medium/high quality and locally

directed for the lower grades. Designs are generally copied as lacking concept of collection. However, recent years show the development of few companies towards an upgraded level of operation.

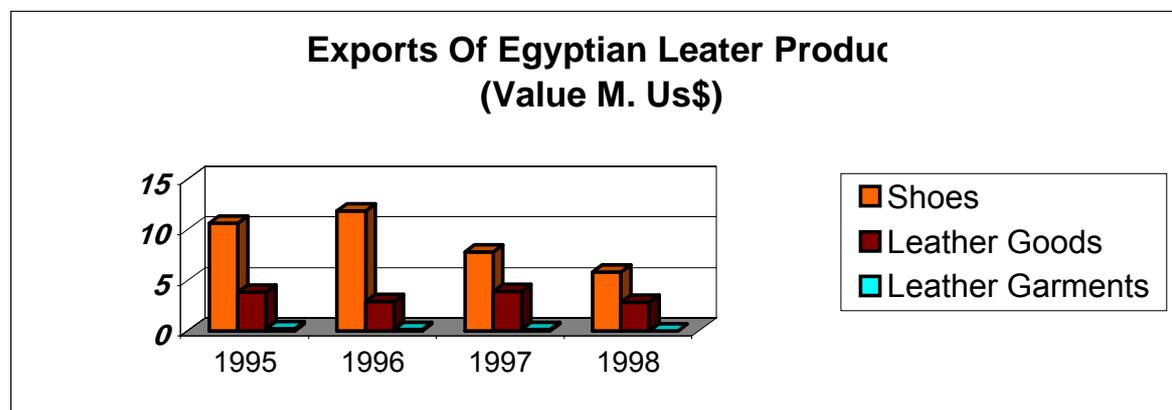
Market

Exports of Leather Products

The following reflects the export pattern of the leather sector over the last four years per million US\$.

YEAR	1995	1996	1997	1998	Change % (95 - 98)
Shoes	10,6	11,8	7,8	5,8	- 45%
Leathergoods	3,8	2,9	3,9	2,8	- 26%
Leather Garments	0,2	0,1	0,1	—	-100%
TOTAL	14,6	14,8	11,8	8,6	(Average)- 57%

The difference in the export value between footwear and leather goods is not proportional to that of their respective industrial base- whilst exports of leather garments remains the least as reflected in the following charts over the last four years.

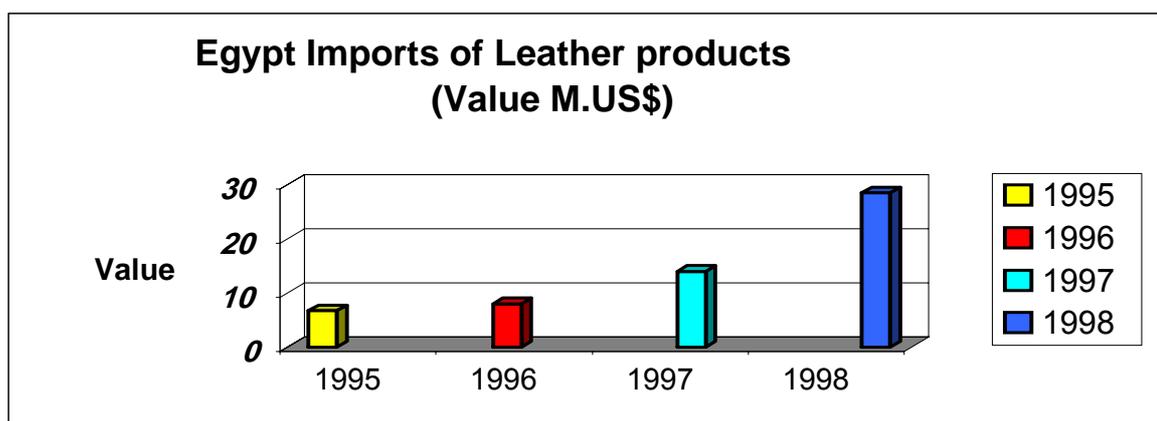


Imports of Leather Products

The import picture as follows, reflects a vast growth rate over the last four years, as representing a tough competitor to the local supply at the domestic market. As reported, most of the imports focused on footwear and particularly sportive and casual shoes.

		Value in Million US\$			
YEAR		1995	1996	1997	1998
Import Value	Leather products	6.7	7.9	14	29

The alarming and steady growth of leather products imports has its serious impact on the sector's performance particularly for shoes as occupying a significant part of the domestic



market and putting limitations on sales of the local supply. This situation makes efforts for accelerated exports a must for the sector's survival taking into account the possible negative effect on employment and related social aspects.

Involved Agencies

Follows are the projects which have been implemented or ongoing implementation in assistance to the sector by various organizations and counterparts over the last decade.

Egyptian Export Promotion Center (EEPC)

The EEPC has been the national counterpart for the following assisted programs

a) **Leather Goods - EU assistance**

The project has assisted a number of selected leather goods companies in product development, factory organization and export promotion to selected EU markets including fair participation. (1989 - 1991)

b) **Leather Goods - GTZ/Protrade**

A continued assistance to selected leather goods companies as directed mainly to the FRG market. (1992 - 1995) at Offenbach leather goods fair.

- Both operations resulted in physical development of production facilities and regular export business

c) **Footwear - GTZ/Protrade**

Technical assistance mainly in product designs and extended fair participation (GDS) to selected footwear companies (1990 - 1997)

d) **Leather Garments - GTZ/Protrade**

Technical and marketing assistance in product design and fair participation (Interjeans) to selected leather garments companies (1998 - 1999) as planned completion by the year 2000.

UNIDO

a) Direct technical assistance to a selected Egyptian footwear company for obtaining Bally shoe license (1992)

b) Direct assistance to selected shoe companies in fair participation at Pirmasens & GDS (1992-93)

Egyptian Chamber of Leather Industries

a) Establishment of Footwear Vocational Training Center - Amyria ,Cairo- assistance in equipment procurement and start-up operation by GTZ. The center has started its training and services activities jointly under the auspices of the Chamber and the Ministry of Industry.

a) Promotion of the Chamber Services to the industry- Limited assistance by the CIPE project, in supporting the conduct of 3 consecutive industry workshops.

Federation of Egyptian Industries

The footwear sector is included in the Skills Standards programme of the Federation where functional map is established and skills standards are being developed for the sector .

Locations of Footwear Manufacturers

At cottage and artisan levels, the manufacturing activities are highly concentrated in Cairo with 50 per cent of the workshops and 75 per cent of the total workforce. Among Cairo districts, the heart of the city accommodates the bulk of the operation being close to the sources of the varied material requirements in order to meet the day to day needs as typical to this scale.

Alexandria, ranks the second in the workshop density with a share of 10 per cent of the workshops and 7 per cent of the workforce- leaving the balance widely distributed in the country provinces.

Modern shoe factories around Cairo, show a more even pattern of distribution with a concentrated tendency inclined towards the new cities at 10th of Ramadan and 6 October. Here the credit goes to the new generation inherited the business and in this process has encountered varied types of difficulties particularly for the workers transport at an average cost of LE 8,000/month for some 100 labours. This cost is balanced by various Government incentives offering 10 years tax holiday as well as cheap land.

A recent Government decision for the transfer of the tanning industry from the present location in old Cairo to Badr city on the road to Suez is expected to catalyze further industry movement in the direction of TRC being at a distance of 8 Km. from Badr. This is also induced by the business tendency for grouping due to mutual interest.

At greater Cairo, the modern factories established some twenty years ago were meant to find a location at the outskirts of the city- which encounters the vast growth of urban areas to embrace these locations and invites the thinking to move further. Among the modern factories, only one company operates in the heart of the city whilst the rest of eight factories are widely dispersed around the city.

Medium and large scale footwear manufacturers at partial or full level of mechanization share some 30 per cent of the total sector's output.

Estimates [30 Factories 5 M. pairs /annum 4,000 Workforce]

Factories geographical distribution :

{ 5 } Cairo down town	{ 6 } Cairo suburbs
{ 14 } 10th Ramadan City including tanneries new location	{ 5 } 6 October City and surroundings

Seventy per cent of the sub-sector's outputs are the estimated manufacture as small and cottage levels.

Estimates [19,000 Workshops 33 M.pairs /annum 42,000 Workforce]

Factories geographical distribution in Cairo :

{435} North	{649} South	{1230} East	{1108} West
{1894} Middle	{1542} Shoubra	{814} Fostat	{9} Hiliopolis
{479} Zaytoon	{279} Wayly	{2355} Abdeen	{604} Helwan

Sixty per cent of the country's workshops and 70 per cent of the total workforce at recognized cottage level are located at and operating in Cairo.

Structure of the Footwear Manufacture

In Egypt, the footwear manufacture represents the bulk of industrial activities among the leather based industries with a total output estimated at 70 million pairs per annum applying both leather and man-made material. In general, the leather sector ranks the fourth after textile, food and chemical industries with an estimated share of 6 per cent of the total industrial production. The sub-sector's activities could be broadly classified at two distinctive levels.

Cottage and Small-Scale

At small-scale and cottage artisan levels, an old survey carried out in the late sixties by ARAC Consultants has estimated the total number of workshops at some 6320 units which may not necessarily reflect the actual picture for the sector at the time due to the domination of the unrecognized establishments. However, recent statistics on the recognized footwear manufacture at the same level reflect a drastic growth in the number of cottage manufacturers at some 19,000 workshops employing some 42,000 workers. Some experts have estimated that as much as 30-50 per cent of Egyptian economic activity is in the informal sector. Should this pattern apply to the leather based manufacture, a conservative estimate of the total workforce would engage over 60,000 PMUple in the business- at this particular level. The share of the footwear sub-sector in this activity is estimated at 85 per cent leaving the balance for other leather based manufacture.

Medium and Large Scale

The large scale operations in the sector of an output over 1,000 pairs/day are limited to 5 factories producing sports shoes and mostly applying man-made material where Bata shoe company in Alexandria is included in this category with an exceptional output of 20,000 pairs/day. These factories have been established with the involvement of foreign partners where -in some cases- the main interest has been the supply of sophisticated equipment rather than the transfer of technology and marketing partnership.

In the second rank, 25 modern medium scale factories have been established by pioneering footwear manufacturers as graduating their plants from small scale and cottage levels applying own experience and frequent limited advice whenever available. The daily output ranges from 200 - 1,200 pairs of leather shoes comprising low/medium and high priced footwear. In this category, a limited footwear components manufacture takes place either for own factory consumption and/or supply to the cottage workshops- mainly unit soles, heels and unit insoles.

With the exception of Bata company, the modernization in the footwear manufacture has been introduced during the last two decades with the application of technologies at various levels of semi and full mechanization.

Development Pattern

The cottage level of footwear manufacture has experienced a sudden switch from traditional handcrafted high quality shoes to a sort of mass production in order to meet the export boom demand as created in the sixties through sales to countries of then centrally planned economies. This orientation, however, has induced a certain amount of production organization which was necessary to reach higher outputs at this level with no real concept of industrialization. As a result, the quality was subject to continued deterioration against increased profitability being supported by buyer's acceptance as well as heavily protected domestic market. Consequently, the productivity output per worker has increased from a former level of 1-2 pairs/worker/day to some 10 pairs/worker/day- a pattern which remains valid till today.

With minimum overhead expenses, the production is highly competitive particularly at the domestic market which still enjoys the heavy protection. Although this productivity could be comparable with that produced in the Far-East, the differences in quality and finishing even for cheap grades of shoes are quite noticeable. Should the market forces be allowed to work through lifting restrictions on the footwear imports -which is expected to take place under the ongoing structural adjustments- the honeymoon will be over.

Pressure created by the vast demand which appeared to continue at the time, together with fast profit making, both have encouraged the entrepreneurship in the sector to venture into a process of modernization by procurement of new

equipment and establishing factories learning from trials and errors. As models to copy, the Government has supported ventures to set-up a fairly large scale footwear factories as Kuwait Egyptian Shoe Co. and the International Shoe Company. Whilst the private medium-scale companies succeeded to continue the struggle by finding an optimum survival formula till present, the large scale operations are encountered with serious losses.

Both attempts, however, have not yet found a successful solution for the transformation from the cottage pattern towards mechanization. This is clearly demonstrated by the average productivity at semi or fully mechanized levels as estimated at 4-5 pairs/worker/day vis-a-vis the world norms under comparable conditions giving 15 pairs/worker/day i.e 60-70 per cent lower. This situation is putting the mechanized operation with higher overheads at a real disadvantage whether for export markets and/or the domestic market against competition either from the overseas efficient suppliers and the indigenous cottage manufacturers.

Protection at the domestic market remains to be the safety valve.

Accordingly, the sector features an unbalanced pattern of development at both cottage and mechanized levels where the situation at the latter appears to be crucial. This is diagnosed by the serious lack of balance between the brought in technology and the weak human infrastructure at management, middle management and operators levels. Trials for production of shoe components attempting an increased productivity to encounter operators deficiencies are hampered by lack of technical knowledge, standardization and coordination of the industrial activities. The sub-sector's challenges have remained long without solution in the absence of practical and business oriented group joint work by the trade as well as clearly defined development strategy where the private industry should play a collective key role.

6. SURVEY OF MAGRA EL-EION AREA

The survey was undertaken by Engineers working for the Cairo Governorate, which also prepared the four maps of the area. The results were obtained by IMC (Technical) which presented the results in tabular form. We understand that the tables contain all of the survey outputs for each business unit, but this point needs to be checked formally with the Cairo Governorate, as any additional information that has already been collected would be useful to prepare the database.

Survey Approach and Status

The overall area has been divided into four zones. The last information on Zone 4 was provided on 14th December 2005. It is our understanding that IMC (Technical) have provided all of the results. According to the map of Zone 4 there are 150 business units in this zone, but results have been provided for only 112 business units. There are therefore 28 business units missing from the results provided to us, which will affect the totals in all of the tables provided herein.

Analysis of Survey

The analysis of the results, and the preparation of this report, has been undertaken by the ASSOMAC team.

Area of Magra El-Eion

It is important to recognise that the area covered by the survey was determined by the Cairo Governorate. At the time of preparing this report we have not received a map that indicates how the four zones fit together, although such a map has been requested. It is therefore not possible for us to indicate how the area covered by the survey relates to the overall area of Magra El-Eion.

Business Unit

The purpose of the survey was to identify all of the businesses that are located in Magra El-Eion and the area that is allocated to each business. The survey has indicated that there are areas of land that are not occupied by business, such as: houses; mosques; and vacant areas. These have all been included under the term “business units” to have a single reference point for assessing the number of activities that need to be taken into account in implementing the overall project.

Next Steps

The next steps relating to the survey and the analysis of the results are:

1. Obtain a map which indicates how the four zones relate to each other.
2. Make a site visit to the Magra El-Eion area to determine how the area covered by the survey relates to the area of Magra El-Eion. This step should cover all areas that could become vacant based on the total implementation of the Magra El-Eion – Robikki relocation project. For example areas of housing that could become available should be covered by the survey.
3. Apply the survey to any business units that were not included within the original survey activity, with this to apply to the 28 business units that are missing from Zone 4.
4. Based on the second step there should be a clearly defined boundary of the overall Magra El-Eion area that is covered by the overall project. This boundary will provide the basis on undertaking the GPS survey, which has these main purposes:
 - i. Provide an accurate measurement of the overall Magra El-Eion site area, including common areas that were not measured through the survey by the Cairo Governorate. This step is required to be able to present thorough estimations of the redevelopment value of the Magra El-Eion site.
 - ii. Provide a digital record of the exact location of each business unit within the area and to cross-reference this information against the content of the database of business units.
 - iii. Use the digital information to check the accuracy of the land area allocated to each business unit to results in a formal record of each land area which can be published and used in discussions with the business unit owners.
 - iv. Use the digital information to calculate the compensation value that will be attached to each business unit for participating in the overall project.
5. The Magra El-Eion site boundary needs to be formally acknowledged by the overall Steering Committee.
6. Enter the information from the survey into the database of business units.

Occupied Land Area

The break-down of the total land area, which is occupied by business units is:

Table: 1 Occupied land area in Magra El Eion

ZONES	LAND AREA OF ALL BUILDINGS
Zone 1 ¹	46,623.90 m ²
Zone 2	24,259.13 m ²
Zone 3	39,610.44 m ²
Zone 4	53,897.80 m ²
Total Three Zones	164,391.27 m ²

¹ The figure provided by IMC (Technical) at 64,079.22 m² is wrong.

The total land area that is allocated to business units, subject to the next steps, is 164,391.27 m².

Total Land Area

The above areas do not take into account the common land areas for all four zones. An issue for being able to calculate the common areas is that IMC (Technical) have indicated that they do not know the scale on the maps. It appears that a reasonable estimate of the total land area that will be within the Magra El-Eion site boundary, is 300,000 m², but this is subject to revision through the application of the next steps.

Site Value

IMC (Technical) have indicated, informally, that the value of the land will be EGP 5,000 – 7,000 when cleared, decontaminated and ready for redevelopment. On this basis the total site area has a current estimated value of EGP 1.5 to 2.1 bn.

Number of Business Units

A total of 775 business units have been identified through the survey. The number of businesses in each zone, broken-down by business type is:

Table: 2 Number of business units in Magra El Eion

BUSINESS TYPE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Tanneries	82	100	67	61	310	41.1
Glue factories	3	66	13	1	83	11.0
Leather stores	53	7	9	5	74	9.8
Chemical stores	21	5	22	22	70	9.3
Shops / stores ¹	22	3	16	10	51	6.8
Cafeteria / kebab	30	-	14	4	48	6.4
Workshops	15	2	7	3	27	3.6
Houses	13	-	6	2	21	2.8
Mosque	2	-	-	5	7	0.9
Intestine factory	1	-	-	3	4	0.5
Vacant	2	-	-	1	3	0.4
Shoe / sole factory	-	-	2	-	2	0.3
Dye house	-	1	-	-	1	0.1
Salt store	1	-	-	-	1	0.1
Coke processing	-	-	-	1	1	0.1
Marble factory	-	-	-	1	1	0.1
Organic fertilisers	-	-	-	1	1	0.1
Oil factory	-	-	-	1	1	0.1
Others	8	17	23	1	49	6.5
Total	253	201	179	122 ²	755	100.0

¹ Includes kiosks

² According to the map of Zone 4, there are 150 business units, with the result that

there are 28 businesses missing from the analysis.

Tanneries represent the largest number of business units, at 310, representing 41% of the total. There are also significant numbers of: glue factories at 83 (11%); leather stores at 74 (9.8%); and chemical stores at 70 (9.3%). Together these four business categories account for over 70% of the business units.

Business Concentrations

The following table indicates the percentage of the total business units in each zone accounted for by the leading four business categories.

Table: 3 Business concentration in Magra El Eion

	ZONE 1	ZONE 2	ZONE 3	ZONE 4
Tanneries	32.4%	49.8%	37.4%	50.0%
Glue factories	1.2%	32.8%	7.3%	0.8%
Leather stores	20.9%	3.5%	5.0%	4.1%
Chemical stores	8.3%	2.5%	12.3%	18.0%

The tanneries are well represented in all four zones, but with concentrations in zones 2 and 4. The glue factories are concentrated in zone 2. The leather stores are concentrated in zone 1. The chemical stores are spread throughout the four zones, but with a lower presence in zone 2.

Size Of Business Units

The only way of indicating business size from the survey is to use the land area occupied by each business unit. The following results are presented by each zone, followed by the area as a whole, with a split between all businesses and the tanneries presented as a separate category.

Zone 1

Table: 4 Zone 1 Number of business units in Magra El Eion

SIZE BAND OF LAND	ALL BUSINESSES		ONLY TANNERIES	
	Number Of Businesses	% Break-down	Number Of Businesses	% Break-down
Unknown	-	-	-	-
10 m ² and under	27	10.7	-	-
10 m ² - 25 m ²	63	24.9	1	1.2
25 m ² - 50 m ²	46	18.2	7	8.5
50 m ² - 100 m ²	27	10.7	12	14.6
100 m ² - 250 m ²	35	13.8	21	25.6
250 m ² - 500 m ²	25	9.9	19	23.2
500 m ² - 1,000 m ²	22	8.7	19	23.2
+ 1,000 m ²	8	3.2	3	3.6
Total	253	100.0	82	100.0

The size of all businesses in Zone 1 is evenly distributed across the range 10 m² to 250 m², with the biggest concentration in the size range 10 – 25 m². Zone 1 is dominated by small business units, with only 21.8% occupying areas of over 250 m².

With tanneries there is a concentration in the size range 100 m² to 1,000 m², with 72% of the tanneries in this size range. Although the tannery businesses are, on average, significantly larger than the other business

categories it needs to be noted that in the size category over 1,000 m² there are 5 non-tanneries, compared to 3 tanneries.

Zone 2

Table: 5 Zone 2: Number of business units in Magra El Eion

SIZE BAND OF LAND	ALL BUSINESSES		ONLY TANNERIES	
	Number Of Businesses	% Break-down	Number Of Businesses	% Break-down
Unknown	-	-	-	-
10 m ² and under	6	3.0	-	-
10 m ² - 25 m ²	25	12.4	-	-
25 m ² - 50 m ²	68	33.8	5	5.0
50 m ² - 100 m ²	89	44.3	29	29.0
100 m ² - 250 m ²	12	6.0	56	56.0
250 m ² - 500 m ²	1	0.5	9	9.0
500 m ² - 1,000 m ²	-	-	1	1.0
+ 1,000 m ²	-	-	-	-
Total	201	100.0	100	100.0

With all businesses the dominant size range in Zone 2 is 25 m² to 100 m², 78% of the businesses in this range. The businesses in Zone 2 are slightly larger on average, than in Zone 1.

With tanneries the dominant size range is 100 m² – 500 m², with 61% in this size range. There is only 1 tannery of over 500 m² and none over 1,000 m².

Zone 2 has a concentration of small to medium sized business units.

Zone 3

Table: 6 Zone 3: Number of business units in Magra El Eion

SIZE BAND OF LAND	ALL BUSINESSES		ONLY TANNERIES	
	Number Of Businesses	% Break-down	Number Of Businesses	% Break-down
Unknown	2	1.1	2	2.9
10 m ² and under	10	5.6	-	-
10 m ² - 25 m ²	27	15.1	-	-
25 m ² - 50 m ²	27	15.1	1	1.4
50 m ² - 100 m ²	28	15.6	8	11.5
100 m ² - 250 m ²	40	22.9	22	33.3
250 m ² - 500 m ²	25	14.0	18	27.5
500 m ² - 1,000 m ²	11	6.1	9	13.0
+ 1,000 m ²	9	5.0	7	10.1
Total	179	100.0	67	100.0

All businesses are spread relatively evenly across the size categories between 10 m² and 500 m². The tanneries are significantly larger than the non-tannery businesses, with 61% in the size range 100 m² to 500 m². There are also 16 tanneries over 500 m² in size.

In Zone 3 all businesses are mainly in the small to medium size range, but there is a concentration of larger tanneries in this zone.

Zone 4

Table: 7 Zone 4: Number of business units in Magra El Eion

SIZE BAND OF LAND	ALL BUSINESSES		ONLY TANNERIES	
	Number Of Businesses	% Break-down	Number Of Businesses	% Break-down
Unknown	-	-	-	-
10 m ² and under	8	6.6	-	-
10 m ² - 25 m ²	17	13.9	-	-
25 m ² - 50 m ²	12	9.8	-	-
50 m ² - 100 m ²	4	3.3	2	-
100 m ² - 250 m ²	34	27.9	27	48.9
250 m ² - 500 m ²	18	14.8	13	23.4
500 m ² - 1,000 m ²	14	11.5	10	17.0
+ 1,000 m ²	13	10.7	4	5.8
Total	122	100.0	61	100.0

There is a concentration of all businesses in the 100 m² to 250 m² size range, with 28% in this category. 65% of all businesses are over 100 m² in size, which is significantly different from the other three zones (35.6% Zone 1; 6.5% Zone 2; and 48% Zone 3).

The average size of the tannery businesses is also larger in Zone 4, with 97% over 100 m², with nearly 50% in the size range 100 – 250 m².

All Four Zones

Table: 8 All zones: Number of business units in Magra El Eion

SIZE BAND OF LAND	ALL BUSINESSES		ONLY TANNERIES	
	Number Of Businesses	% Break-down	Number Of Businesses	% Break-down
Unknown	2	0.3	2	0.6
10 m ² and under	51	6.8	-	-
10 m ² - 25 m ²	132	17.5	1	0.3
25 m ² - 50 m ²	153	20.3	13	4.2
50 m ² - 100 m ²	148	19.6	51	16.4
100 m ² - 250 m ²	121	16.0	126	40.6
250 m ² - 500 m ²	69	9.1	59	19.0
500 m ² - 1,000 m ²	47	6.2	39	12.6
+ 1,000 m ²	30	4.0	19	6.1
Total	755	100.0	310	100.0

Within the whole site there is a much wider spread of all businesses, than applies to tanneries, with the latter having a 41% concentration in the size range 100 m² to 250 m². 56% of all businesses are in the size range 25 m² to 250 m², compared to 72% of tanneries being in the size range 100 m² to 1,000 m². There are 19 large tanneries with over 1,000 m².

Break-down of businesses by business type

Tanneries:

Table: 9 Number of Tanneries in Magra El Eion

SIZE BAND OF LAND	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Unknown	-	-	2	-	2	0.6
10 m ² and under	-	-	-	-	-	-
10 m ² - 25 m ²	1	-	-	-	1	0.3
25 m ² - 50 m ²	7	5	1	-	13	4.2
50 m ² - 100 m ²	12	29	8	2	51	16.4
100 m ² - 250 m ²	21	56	22	27	126	40.6
250 m ² - 500 m ²	19	9	18	13	59	19.0
500 m ² - 1,000 m ²	19	1	9	10	39	12.6
+ 1,000 m ²	3	-	7	9	19	6.1
Total	82	100	67	61	310	100.0

As already indicated there is a concentration of tanneries in the 100 m² to 250 m² size range.

Glue factories:**Table: 10 Number of Glue factories in Magra El Eion**

SIZE BAND OF LAND	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Unknown	-	-	-	-	-	-
10 m ² and under	-	-	-	-	-	-
10 m ² - 25 m ²	-	-	1	-	1	1.1
25 m ² - 50 m ²	1	10	2	-	13	15.3
50 m ² - 100 m ²	-	36	7	-	43	50.6
100 m ² - 250 m ²	1	20	3	-	24	28.2
250 m ² - 500 m ²	1	2	-	-	3	3.3
500 m ² - 1,000 m ²	-	-	-	1	1	1.1
+ 1,000 m ²	-	-	-	-	-	-
Total	3	68	13	1	85	100.0

The glue factories are concentrated in the 50 m² to 250 m² size range, with 79% of the units in this size range.

Leather Stores:**Table: 11 Number of leather stores in Magra El Eion**

SIZE BAND OF LAND	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Unknown	-	-	-	-	-	-
10 m ² and under	7	-	-	-	7	9.7
10 m ² - 25 m ²	6	-	1	-	7	9.7
25 m ² - 50 m ²	11	2	2	-	15	20.8
50 m ² - 100 m ²	9	3	2	-	14	19.4
100 m ² - 250 m ²	12	3	2	1	18	25.0
250 m ² - 500 m ²	3	-	2	1	6	8.3
500 m ² - 1,000 m ²	4	-	-	-	4	5.6
+ 1,000 m ²	-	-	-	1	1	1.4
Total	52	8	9	3	72	100.0

The leather stores are concentrated in the size range 25 m² to 250 m², with 65% of the units in this size range.

Chemical Stores:

Table: 12 Number of chemical stores in Magra El Eion

SIZE BAND OF LAND	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Unknown	-	-	-	-	-	-
10 m ² and under	3	-	-	6	9	13.6
10 m ² - 25 m ²	8	2	8	9	27	41.1
25 m ² - 50 m ²	8	3	6	2	19	28.8
50 m ² - 100 m ²	-	-	6	-	6	9.1
100 m ² - 250 m ²	-	-	2	-	2	3.0
250 m ² - 500 m ²	1	-	-	1	2	3.0
500 m ² - 1,000 m ²	-	-	-	-	-	-
+ 1,000 m ²	1	-	-	-	1	1.5
Total	21	5	22	18	66	100.0

The chemical stores are concentrated in the size range 10 m² to 50 m², with 70% of the units in this size range.

Shops, Stores, Cafeterias and Kebab Houses:

Table: 13 Number of Shops, Stores, Cafeterias and Kebab Houses in magra El Eion

SIZE BAND OF LAND	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Unknown	-	-	-	-	-	-
10 m ² and under	13	-	7	1	21	22.6
10 m ² - 25 m ²	29	-	9	2	40	43.0
25 m ² - 50 m ²	9	-	7	-	16	17.2
50 m ² - 100 m ²	-	1	3	-	4	4.3
100 m ² - 250 m ²	-	2	3	1	6	6.4
250 m ² - 500 m ²	1	-	-	2	3	3.2
500 m ² - 1,000 m ²	-	-	-	2	2	2.1
+ 1,000 m ²	-	-	1	-	1	1.1
Total	52	3	30	8	93	100.0

The clear majority of shops, stores, cafeterias and kebab houses are small with 83% in the size range 10 m² to 50 m².

Factories, Workshops, Tool Stores, Carpenters, Dyehouses, Shoes and Soles Factories, Rubbing, Finishing (on its own), Tool Sharpener, Car Tools, Horse Stables, Additional Activities:

Table: 14 Other activities in Magra El Eion

SIZE BAND OF LAND	ZONE 1	ZONE 2	ZONE 3	ZONE 4	TOTAL	% BREAK-DOWN
Unknown	-	-	-	-	-	-
10 m ² and under	4	-	2	-	6	15.0
10 m ² - 25 m ²	7	2	4	-	13	32.5
25 m ² - 50 m ²	4	1	1	2	8	20.0
50 m ² - 100 m ²	4	-	1	-	5	12.5
100 m ² - 250 m ²	-	-	2	-	2	5.0
250 m ² - 500 m ²	-	-	1	1	2	5.0
500 m ² - 1,000 m ²	-	-	-	1	1	2.5
+ 1,000 m ²	1	-	-	2	3	7.5
Total	20	3	11	6	40	100.0

The majority of the workshop businesses are small with 68% in the size range 10 m² to 50 m².

Allocation of Land Areas

Table: 15 Allocation of land area in Magra El Eion

BUSINESS TYPES	ZONE 1		ZONE 2		ZONE 3		ZONE 4		TOTAL	
	Area	%	Area	%	Area	%	Area	%	Area	%
Tanneries	29,318	62.9	14,943	61.6	26,906	67.9	33,235	61.8	104,402	63.6
Leather Stores	9,232	20.0	693	2.9	1,293	3.3	2,904	5.4	14,122	8.6
Glue Fact	468	1.0	6,194	25.5	1,047	2.6	781	1.5	8,490	5.2
Chemical Store	2,460	5.3	162	0.7	1,136	2.9	592	1.1	4,350	2.6
Shops, etc	1,332	2.9	433	1.8	2,395	6.0	2,019	3.8	6,179	3.8
Workshops, etc	1,712	3.7	72	0.3	912	2.3	11,071	20.6	13,767	8.4
Others	2,101	4.5	1,762	7.3	5,921	14.9	3,129	5.8	12,913	7.9
Total	46,624	100.0	24,259	100.0	39,610	100.0	53,731	100.0	164,223	100.0

Although tanneries account for only 41% of the business units in the Magra El-Eion site, they represent 64% of the land area allocated to business units. The next most significant land allocations are to: leather stores at 8.6%; and glue factories at 5.2%.

Tanneries within 50 m of boundary

Table: 16 Tanneries within 50 m of bundary in Magra El Eion

	NO.	% TOTAL	LAND AREA IN M ²	% TOTAL LAND AREA	TANNERIES > 500 M ² LAND AREA	% ALL TANNERIES > 500 M ² LAND AREA IN ZONE
Zone 1	24	8.1	7,730	5.1	4	18.2
Zone 2	27	9.1	4,472	3.0	1	100.0
Zone 3	-	-	-	-	-	-
Zone 4	7	11.5	5,578	3.2	2	14.3
Total	58	18.7	17,780	11.2	7	12.1

The current planned approach of evicting businesses that are within a 50 m area from the site boundary will impact on 58 tanneries, which represents on 18.7% of the total number of tanneries. More significantly this approach will impact on only 7 of the large tanneries (over 500 m²), which is 12% of the total number of tanneries in this size category.

Other Areas

Zone 4 includes an area of housing which is not covered by the survey, but is estimated to be about 10,000 m². The map for zone 4 indicates there are tanneries integrated in with the housing. It needs to be checked that this housing accommodates families whose income earners work in the Magra El –Eion area. If this is the case this housing can be included within the overall area of Magra El-Eion to be redeveloped.

Restructuring Requirement

The following quote is taken from the previous DOL report “Even with the restructuring within the sector there is still significant excess production capacity throughout Egypt’s Tanneries Sector, resulting in an average production capacity utilisation rate of 39%. As most tanneries have low overhead costs, they can still be profitable at low levels of production capacity utilisation. This situation will have significant implications for any new modern tanneries, which will carry substantially higher overheads and will have break-even production capacity levels of about 75%. It is essential that a down-sizing of overall production capacity is achieved in parallel to modernising production facilities.”

The above statement was made without having detailed information on all of the tanneries located within the Magra El-Eion area. More comprehensive information is now available from the survey of the Magra El-Eion area being

undertaken through the Cairo Governorate. Its two main areas of information for each tannery are:

- Area of land allocated to each tannery.
- The total floor space area available to be used by each tannery.

The results for each area of information, by zone, and for Magra El-eion as a whole are:

In m²

Table: 17 Summary: Magra El Eion land area and floorspace

(M ²)	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ALL 4 ZONES
Land area	29,318	14,943	26,906	33,235	104,402
Floorspace area	37,856	24,169	37,597	34,273	133,895

The 104,402 m² of land area can be assumed to be predominantly related to beam house activities to produce wet blue. Floor space above ground floor level is not able to carry the loads and vibration associated with the drums used in this first stage of production activity. The difference between the land area and the floorspace area can be assumed to be storeys above the ground floor which could be used for later stages in the production process. It is accepted that these assumptions need to be verified through more detailed assessments of each tannery, but they allow for useful analysis to be undertaken pending the availability of more detailed information.

The latest plan for Phase 1 is to provide 44 tanneries with the floor space area indicated in the following table.

Table: 18 Robikki phase 1 envisaged dimension

	Number	Production Area Range	Average Production Area	Total Production Area
Small	21	300 – 650 m ²	475 m ²	9,975 m
Medium	12	1,200 – 4,000 m ²	2,600 m ²	31,200 m ²²
Large	11	6,000 – 8,500 m ²	7,250 m ²	79,750 m ²
Total				120,925 m²

The production floor space area under the latest approach at 120,925 m² is close to the total existing production floor space at Magra El-Eion of 133,895 m². On this basis the requirement for restructuring is limited to converting floor space area that is currently dedicated to beam house activities into producing crust and finished leather.

It is important to recognise, though, that the planned 44 tanneries equate with a annual production capacity of 110 mn sq ft, which the current feasibility and

financial assessment study may indicate is too high. Any reduction below 110 mn sq ft of annual production capacity will require a reduction in the total floor space between the level that currently exists at Magra El-Eion and the level that will be constructed at Robikki.

6.1 Assessing The Robikki Project

Source of Project

As indicated in Section 1 the Robikki Project has, up to recently, been based on the ASSOMAC Report, which specified the project to be established in three phases. This report indicates the number of square metres of tannery floor space that is to be constructed at Robikki, whereas we prefer to work in sq ft of production capacity. The relationship between the two measures, based on ASSOMAC's approach, is indicated in the following table:

	PHASE 1	PHASE 2	PHASE 3	TOTAL
Tannery floor space in m ²	91,724	48,434	66,715	206,873
Tannery production capacity in mn sq ft ¹	109.2	62.4	70.2	241.8

¹ These figures were used in the previous section to calculate the future level of production capacity in Egypt's Tanneries Sector.

The above relates only to the tanneries to be established at Robikki, but in addition areas are set aside for the construction of: the wastewater treatment facility; stores and workshops to support the tanneries; support facilities, such as administration buildings; the Leather Technology Centre; gelatine and leather fibreboard production units; and factories to produce leather products. Included within the overall project is a wastewater treatment facility to meet the effluent requirements of all of the site activities.

All of Robikki's new tanneries are based on standard tanning unit with the following specifications: internal floor area of 6,480 m²; site area of 14,400 m²; buildings covering 45% of the overall site area, with 55% available for other activities; capacity to process 650 hides a day; and annual production capacity of 7.8 mn sq ft of wet blue. There are three types of tannery units:

- Integrated double units, capable of processing 1,300 hides per day, with annual production capacity of 15.6 mn sq ft.
- Integrated single units, with three sub-types of tanneries: general bovine; units dedicated to producing sole leather; and units dedicated to working with skins (ovine).

- Integrated “segmented” single units, where separate stages in the production process are to be owned and operated as separate tannery businesses.

Under the third category of integrated segmented single units there are two types of tanneries. The first, is the overall integrated unit which has the same scale specification as the second category of integrated single units. The second, are the smaller tanneries, each to operate as a separate businesses dedicated to stages in the production process, within the same overall integrated unit.

Robikki Project Assessment (ASSOMAC)

The break-down of tannery units across the above three types of tannery units and annual production capacities by phase are indicated in the following table.

Production Capacity in mn sq ft

TANNERY TYPE	PHASE 1		PHASE 2		PHASE 3		TOTAL	
	No. Units ¹	Production Capacity	No. Units	Production Capacity	No. Units	Production Capacity	No. Units ¹	Production Capacity
Integrated double units	2	31.2	-	-	-	-	2	31.2
Integrated: single units:								
- general bovine	2	15.6	2	15.6	-	-	4	31.2
- sole leather	1	7.8	-	-	2	15.6	3	23.4
- skin (ovine)	2	15.6	-	-	2	15.6	4	31.2
Total	5	39.0	2	15.6	4	31.2	11	85.8
Integrated segmented single units	5	39.0	6	46.8	5	39.0	16	124.8
Individual tanning stages	(44)		(31)		(38)		(113)	
Total	12	109.2	8	62.4	9	70.2	29	241.8

¹ The measure of unit is the number of tannery buildings. As a double unit is still only one building it counts as a single unit. Likewise the segmented tanneries operate within a single building and are counted as one unit. The table also indicates the number of the individual tannery businesses within the third category.

Across the three phases there are planned to be: 2 integrated double units; 11 integrated single units, with 4 general bovine, 3 for sole leather; and 4 processing skins; 16 integrated segmented single units; giving a total of 29 tannery units. The 16 tanneries in the last category will accommodate 113 individual tannery businesses with each covering one, or two, stages of the production process within the individual integrated tannery unit.

7. IMC-OEIMP PICTURE OF THE PROJECT

IMC TECH. has been in the lead role for implementing the Robikki Project since the submission of the ASSOMAC Report. This organisation usually operates under the abbreviation “IMC”, which is the same as the Industrial Modernisation Centre, the contractor of this study. To avoid confusion between the two organisations we use the abbreviation “IMC TECH.” throughout this report. IMC TECH. was allocated the role of turning the ASSOMAC Report into construction specifications and tenders, with a number of tenders having been issued during 2004. We have received a copy of the report dated October 2004 on the project and we have the following comments on this document:

- Overall production capacity across the three phases has been cut from 241.8 mn sq ft to 200 mn sq ft, but it does not indicate where the 41.8 mn sq ft of production capacity is lost by unit type, or in which phases.
- The 200 mn sq ft of production capacity will not be achieved until 2017, which indicates a longer construction period than indicated in the ASSOMAC Report.
- The report indicates three sizes of tannery units at Robikki, with the following schedule for establishing these units:

UNIT SIZE	NO. OF TANNERY UNITS			
	Phase 1	Phase 2	Phase 3	Total
Small 300 – 650 m ²	21	13	19	53
Medium 1,200 – 4,000 m ²	12	14	12	38
Large 6,000 – 8,500 m ²	11	4	7	22
Total	44	31	38	113

- The total number of tannery units in the last table, from the IMC TECH. Report, are exactly the same as the number of segmented units under the ASSOMAC Project, see earlier table in this section.
- It is not possible to relate the three size categories presented under the IMC TECH. Report back to the ASSOMAC Project. They appear to be new size categories, which should be defined by production capacity as well as floor area.
- We agree with the 7.8 mn sq ft of annual production capacity in the standard unit, as recommended in the ASSOMAC Report. We are concerned that IMC TECH.’s Report appears to introduce new size categories with significantly lower annual production capacities. We are able to make this comment as the floor space area of a tannery of 7.8 mn sq ft annual production capacity is indicated to be 6,480 m² in the ASSOMAC Report. A standard unit in ASSOMAC’s Report, and based

on our approach, equates with the large category in the above table. Compared to our recommended approach presented above for Phase 1, the IMC TECH. Report reduces the number of large tanneries from 14 to 11 and introduces 12 additional medium sized tanneries and 21 small tanneries.

- The IMC TECH. report indicates that there will be flexibilities for the owners of the new tannery units to extend their buildings to be able to increase production efficiencies. The report does not indicate how this will impact on the original ASSOMAC concept that the buildings will occupy 45% of the area of land allocated to each tannery. It needs to be determined whether the flexibility to extend building areas will result in the 45 : 55% split of sites being relaxed, or whether the tanneries will be allocated areas of land that are larger, than required based on this split, from the start.
- IMC TECH. indicates current annual production capacity at Magra El-Eion is 95 mn sq ft. Based on the outcome of our sector review activity, see section 3, we estimate total annual production capacity at Magra El-Eion to be 292.7 mn sq ft. The difference could explain the reason why earlier reports have indicated that the production capacity of the Magra El-Eion tanneries should be increased through the relocation, whereas we have concluded the level of production capacity needs to be down-sized. It is our view that this issue is based on confusion between production capacity and actual production volumes. We agree (generally) with the figure of 95 mn sq ft relating to Magra El-Eion if this is taken to be actual production volume, but this is very different from claiming this is the production capacity of all of the tanneries located within the Magra El-Eion area. All parties involved in the Robikki Project, and in the TMRRI, need to differentiate between annual production capacity and annual actual production volumes.

Basis Of Implementing Robikki Project

The following represents our understanding of the basis of the agreement that has been entered into between the Government of Egypt (GoE) and CLT, with the situation having been up-dated to January 2005:

- Cairo Governorate will make available an area of land at Robikki to relocate the tanneries currently located at Magra El-Eion, with the land being made available to be purchased price of EGP 30 per m². Based on the IMC TECH. Report, the total area of the Robikki Project is 533 feddans, 2.2 mn m². This area includes land allocated for the construction of: 148 shoe and leather product factories; 44 glue production units; 2 leather fibreboard factories; and a range of supporting facilities (public services); in addition to the area allocated to the new tannery units (see above for details) and the wastewater treatment facility.

- GoE will fund 100% the external infrastructure using a grant from the Italian Government.
- The following items are to be funded 50 : 50 by the tanneries and GoE:
 - the internal infrastructure of the site;
 - the wastewater treatment facility, with GoE's half share in this item being funded by a grant from the Italian Government;
 - the shells of the tannery buildings.
- GoE will fund all of the EGP 35 mn costs associated with establishing the Technology Centre.
- The tanneries will fully self-finance the following items:
 - purchase of the land at EGP 30 m²;
 - fitting-out of the tannery building shells;
 - equipping the tanneries;
 - connecting the tannery buildings to the internal site infrastructure.

7.1 Project Implementation Structure

The current approach to implementing the Robikki Project is:

- A new project management company will be formed by the General Organisation For Industrialisation (GOFI), which will have MFTI; CLT; and the National Investment Bank (NIB) as its principal shareholders.
- Tanneries will become shareholders in the new project management company, but it is not decided how they will become shareholders, the amount they will pay per share, or their voting rights.
- Until the new project management company is formed the lead organisation is the IMC TECH., which is part of MFTI.

Project Implementation Roles

The current roles of the organisations involved in project implementation are:

- IMC TECH. is in the lead position for implementing the agreement between the GoE, incorporating the Cairo Governorate, and CLT. The specific tasks to be undertaken by IMC TECH. are:
 - Detailed project technical specification, excluding the Technology Centre. We had been informed that IMC TECH. is using the original ASSOMAC Report as a blueprint, but this appears no longer to be the case.
 - Preparation of construction tender documents, with MFTI delegating this activity to IMC TECH. for the Leather Technology Centre.
 - Issue and evaluate the tenders, and select the winning tenderers.
 - Enter into contracts with the winning tenderers.
- As soon as the new project management company is formed it will take over the lead role from IMC TECH., but we have not been provided with a timetable for implementing this change.
- MFTI's role is to design and implement the Leather Technology Centre, with the management of the construction activity delegated to IMC TECH. There is a unit within MFTI which is responsible for the introduction of Technology Centres across a number of industrial sectors. As indicated in the previous section the way these centres will be set-up and operated is currently under review.
- CLT's role was to apply for the Robikki site to be granted Free Zone status as the area is not part of the Badr City Industrial Zone. It is our understanding that unless an approval has already been granted, such status is no longer available and therefore CLT should no longer pursue this activity. This situation needs to be kept under review as we understand that representations are being made to GoE to continue the tax holidays at the new industrial zones.
- NIB will act as the project's bank providing a loan to the new project management company to cover all project costs that are not covered by donor grants. Further details on this loan are provided below.

Tannery Repayments

We understand that new project management company, and the individual tanneries, will enter into agreements with NIB to obtain loans, as follows:

- NIB will enter into loan agreements with individual tanneries, where the principal amount will be calculated based on an EGP sum per m² of land that each tannery will require at Robikki from the Cairo Governorate. We further understand that the method of calculation has still to be finalised.
- NIB will release its funding as follows:
 - 30% to secure the total land area.
 - 60% at the end of constructing the infrastructure.
 - 10% on final delivery of the operational infrastructure.

We understand that the release of the above sums will be through the new project management company referred to above. Until these funds (bank loan) are available, which is dependent on the formation of the new company, the funding of the implementation of the Robikki Project will depend on the grant from the Italian Government.

- The principal sum will carry an interest rate of 13%, though, we are aware that attempts are being made to secure a lower rate of interest.
- The repayment schedule for each tannery, of its principal amount and interest, will be:
 - 10% when the land is allocated.
 - 15% after the land has been provided.
 - 15% upon receipt of the completed building shell.
 - remaining 60% over a 3 year period from the hand-over of the completed building shell.

Italian Government Participation

The agreement between the Italian Government and GoE can be summarised as follows:

- A grant of EGP 161 mn will be provided to GoE, with the sum split EGP 3 mn for consultancy activity associated with managing the Italian's involvement in the Robikki Project, and EGP 158 mn towards the

capital costs of the Robikki Project. The capital cost contribution covers all of the external infrastructure, with the remainder going towards the wastewater treatment facility and internal infrastructure.

7.2 Project Implementation Status

Our understanding of the current status of the project is:

- IMC TECH. has contracted Arab Contractors to construct the external site infrastructure under a contract with a value of EGP 32 mn, with this work having started in May 2004. The IMC TECH. Report indicates this work will now cost EGP 34 mn.
- IMC TECH. has selected Arab Contractors to construct the internal site infrastructure and the tannery building shells, associated with Phase 1. The contract has a value of EGP 58.6 mn and was signed on 9th December 2004 (it is not clear how a report dated October 2004 can refer to a contract signed in December the same year, unless this is the date on which it is intended to sign the contract). This contract relates to the “networks and piping for water, electricity, sewerage, roads and telephones” area of construction activity indicated in the IMC TECH. Report. In addition a contract has been signed to establish Phase 1 of the Technology Centre, with a value of EGP 14 mn.
- The following three areas of construction activity indicated in the IMC TECH. Report have not yet been contracted, but we understand tenders are ready to be issued:
 - pumping station and effluent pipes, costed at EGP 17 mn;
 - wastewater treatment facility, costed at EGP 66 mn;
 - buildings and services, costed at EGP 137 mn.

Based on the break-down of Phase 1 costs presented later in this section all of the above will be allocated to Phase 1. It needs to be clarified whether the specifications of the above relate only to Phase 1, or to all three phases. If it is the latter their specifications should be reduced to be compatible with the requirements of the tanneries to be established under Phase 1.

- The tenders to construct the remainder of the Technology Centre, with a total cost of 35 mn; and Phases 2 and 3 of the overall project works have still to be finalised.

Project Implementation Timetable

An implementation timetable of 3 years has been applied by IMC TECH. to complete the Phase 1 of the Robikki Project. The IMC TECH. Report indicates the following timetable for undertaking the Phase 1 construction activity that will be under its management:

ITEMS – PHASE 1 ONLY	START DATE	PERIOD IN MONTHS
1) Feeding waste, electricity, gas, telephones, etc to the Robikki site	15/10/04	24
2) Networks piping, water, electricity, sewerage, roads, telephones, etc	15/10/04	24
3) Pumping station and effluent pipes	01/07/04	36
4) Wastewater treatment facility	01/07/04	36
5) Buildings and services	01/07/04	36

It is our understanding that only element 1 of the above has started, with element 2 to start during the second quarter of 2005. This will represent a six month delay on the above timetable. On the basis that elements 3, 4 and 5 have not yet started, and have implementation timescales of 36 months, the earliest they can be completed is mid 2008.

Only on the completion of the work indicated above, will the owners of the new tanneries gain access to the building shells to undertake their own work, which will include:

- Finishing the building shells.
- Connecting the buildings to the internal site infrastructure.
- Constructing the floor and internal supports on which the equipment and machinery will be mounted.
- Install and test the equipment.

Our estimate is that 15 months will be required for each tannery unit to complete the above and be ready to start commercial production.

On the basis that the internal site infrastructure work starts by the end of Q2 of 2005, Phase 1 of the Robikki Project, as defined by IMC TECH., will be completed by the end of Q2 2008, with the tanneries ready to start commercial production from the start of Q3 2009. It will therefore be at least four and a half years before the first tanneries are ready to start operating commercially at Robikki. If the Robikki Project is to be viewed within the context of modernising Egypt's Tanneries Sector we suggest that this timescale is too long and ways need to be found of having the first tanneries operating commercially from Robikki earlier.

We have assumed that not all of the tannery building shells, to be constructed under Phase 1, will be ready at the same time, with them becoming available to be transferred to their new owners, over a twelve month period. On this basis the last of the tanneries under Phase 1 will start to operate commercially at the start of Q3 2010.

The IMC TECH. Report indicates the overall timetable for completing the three phases of construction work will be:

- Phase 1: years 1– 3, but involving up to 5¾ years to have all of the tanneries under this phase operating commercially.
- Phase 2: years 3 – 5, but with a further 2¾ years to have all of the tanneries under this phase operating commercially. The total duration of implementing Phase 2 will therefore take up to year 7¼.
- Phase 3: years 5 – 7, but as with stage 2, a further 2¾ years to have all of the tanneries under this phase operating commercially. The total duration of implementing Phase 3 will therefore take up to year 9¾.

Project Costs

The IMC TECH. Report indicates the costs for implementing the three phases are:

- Phase 1 EGP 312 mn;
- Phase 2 EGP 353 mn;
- Phase 3 EGP 198 mn.

The report only provides a break-down of the Phase I costs, which indicated in the table overleaf:

ITEMS – PHASE 1 ONLY	COST IN EGP MNS
1) Feeding waste, electricity, gas, telephones, etc to the Robikki site	34
2) Networks piping, water, electricity, sewerage, roads, telephones, etc	58
3) Pumping station and effluent pipes	17
4) Wastewater treatment facility	66
5) Buildings and services	137
Total	312

Project Contents and Buildings

The IMC TECH. Report indicates the project has five key elements:

- Production units – we refer to them as tannery units.
- Public services.
- Pipes for infrastructure.
- Leather Technology Centre.
- Wastewater treatment facility.

Our understanding of each of these elements is:

Production Units The latest IMC TECH. proposals for the number and type of tannery units are provided above, along with our comments on these proposals.

Public Services The IMC TECH. Report indicates these include:

- workshops for maintenance and the manufacture of spare parts;
- stores for raw hides and chemicals;
- administration buildings;
- fire centre;
- communications centre and post office;
- commodity freight area;
- mosque.

Project Funding

Phase 1 Our understanding of the current funding of Phase 1 of the project is:

- The full grant of EGP 158 mn from the Italian Government will be used under Phase 1 to finance infrastructure costs.
- The internal site infrastructure and building shells will be funded 50% through GoE and 50% by the tanneries.

Based on the last two points the split of costs will be (see table overleaf):

In

EGP mns

	GOE	TANNERIES	TOTAL
1) Feeding waste, electricity, gas, telephones, etc to the Robikki site	34	-	34
2) Networks piping, water, electricity, sewerage, Roads, telephones, etc	29	29	58
3) Pumping station and effluent pipes	8.5	8.5	17
4) Wastewater treatment facility	33	33	66
5) Buildings and services	68.5	68.5	137
Total	173	139	312

Out of the EGP 173 mn to be funded by GoE, EGP 158 mn (91.3%) will be funded by way of grant from the Italian Government. The net cost to GoE of Phase 1 will be EGP 17 mn.

PHASE	GOE	ITALIAN GOVERNMENT	TANNERIES	TOTAL
1	15.0	158.0	139.0	312.0
2	176.5	-	176.5	353.0
3	99.0		99.0	198.0
Total	290.5	158.0	414.5	863.0

The percentage sourcing of funding across the three phases is indicated next:

PHASE	% FROM GOE	% FROM ITALIAN GOVERNMENT	% FROM TANNERIES	TOTAL
1	4.8	50.6	44.6	100.0
2	50.0	-	50.0	100.0
3	50.0		50.0	100.0
Total	33.7	18.3	48.0	100.0

The tanneries will meet the largest share of the infrastructure costs at 48.0%, with GoE accounting for 33.7%; and a grant from the Italian Government covering 18.3%. With 31 tanneries to be established across all three phases, the average cost for each tannery relating to infrastructure, on site services and to construct the shells of the tanneries will be EGP 13.4 mn.

Tanneries The costs that will be incurred by each tannery is based on a standard facility with annual production capacity of 7.8 mn sq ft:

- Land at EGP 30 per m²; 14,400 m² required; cost EGP 0.432 mn.
- Share of infrastructure costs as indicated above, with the costs being: EGP 9.9 mn during Phase 1; EGP 22.1 mn during Phase 2; and EGP 11.0 mn during Phase 3.
- Finishing the tannery shells, estimated to cost EGP 750 per m² of floor pace; 6,460 m²; cost EGP 4.845 mn.
- Equipping an integrated tannery; all equipment is new; cost EGP 15.576 mn,.

The overall costs to the tanneries will be:

In EGP mns					
PHASE	LAND PURCHASE	INFRASTRUCTURE SHARE	FINISHING TANNERY SHELLS	EQUIPMENT PURCHASE	TOTAL
1	6.048	139.0	67.83	218.064	430.942
2	3.456	176.5	38.76	124.608	343.324
3	3.888	99.0	43.605	140.184	286.677
Total	13.392	414.5	150.195	482.856	1,060.943

The cost for each tannery facility will be:

In EGP mns					
PHASE	LAND PURCHASE	INFRASTRUCTURE SHARE	FINISHING TANNERY SHELLS	EQUIPMENT PURCHASE	TOTAL
1	0.432	9.928	4.845	15.576	30.781
2	0.432	22.062	4.845	15.576	42.915
3	0.432	11.000	4.845	15.576	31.853

The total cost to the tanneries to establish each standard new integrated tannery will be EGP 30.8 mn during Phase 1; EGP 42.9 mn during Phase 2; and EGP 31.9 mn during Phase 3. If the same cost is averaged out over all three phases the cost will be EGP 34.2 mn.

The above costs to the tanneries do not include one-off and increased operating costs, see below.

Cost Comparisons

The total costs to GoE, the Italian Government and the tanneries will be:

In EGP mns

	GOE	ITALIAN GOVERNMENT	TANNERIES	TOTAL
Phase 1 net cost	15.0	158.0	430.942	603.942
Phases 2 and 3	275.5		630.001	905.501
All 3 phases	290.5	158.0	1,060.943	1,509.443

The total project costs, including all capital expenditure to all parties is estimated to be EGP 1,509.443 mn, of which GoE will fund 19.2%; the Italian Government 10.5%; and the tanneries 70.3%, over two-thirds. As the tanneries are clearly the majority funders of the project they should have a much more significant say in how it is to be implemented.

8. NEW ASSESSMENT OF ROBIKKI COSTS

8.1 Specification Of The Total Establishment Costs Of Tannery Units.

Note:

See the models of the building in Annex "V"

See the map of magra El Eion in Amnnex "VII"

The covered area of a factory always represents an important factor for the processing activities developed inside the building. The proper space allows the correct and fluid flow of the in-process materials thru the different phases of the production line and an easier inspection and maintenance activities. This is valid for all type of industry but it represents a must for the tanning activities.

The town-planning of each one of the three tanneries blocks attached to the Master Plan (including also the area for further expansions) represents an ideal subdivision of buildings area to have an organised distribution of the processing activities between complete tanneries and workshops and/or finishing ateliers,.

The dimensions of the lots, in which each one of the three blocks have been subdivided, represent an optimal suggestion based on the results of the survey of the local industrial tanning structure.

The dimension and distribution of the different lots in the block can be modified according further subdivision or unification of the lots based on the requirements of the tanners that will relocate their activity in that block.

The buildings' area should represent the 45% of the area of the relevant lot according to the industrial criteria of the most developed tanning centres. It is advisable that the minimum dimension of the lot does not go under 750 sqmt in order to allow the construction of a workshop of a minimum 325 sqmt covered surface.

The internal dimensions of the buildings are suitable and adjustable to any requirements of the tanners that will relocate their activities at Robikki district.

The several typologies of the buildings foreseen in the first stage, allow the implementation of different tanning activities.

There are buildings with single activity (both a complete tannery and a single workshop/atelier) and buildings in which it is possible associate two or more job tanners. In this case it is possible to implement several production phases where job tanners are thus able to run full time their machines specialising in

some processing cycle. The building can be subdivided as an open space in two or more areas where two or more tanners, maintaining the property of the machines and the possibility of single job subcontract, can group together for typical production phases, such as example:

- Soaking, lime pit, fleshing, splitting in pelt
- Tanning, drying, splitting in wet blue, shaving
- Retanning, stuffing, dying
- Setting out, vacuum drying, conditioning, staking
- Milling, buffing, dusting
- Ironing, embossing

The tannery industry cards, for the several tanning alternative with the relevant dimensions of the buildings, the list of equipment for the specific tanning activity and the water, electrical and thermal estimated consumption, and the tanneries module are attached for information.

The inadequacy of the buildings of the tanneries /workshops of Magra El Eion and the obsolescence of the machineries represents a considerable obstacle to the development and the enhancement of the Egyptian tanning sector.

The respect of the coverage rate of the lots and of the typology of the buildings represents the possibility to have a modern and efficient leather district. The opportunity of association offered to job tanners to have productive specialisation with contained investment equipment cost and then shorter repayment time, will allow the sector to become more efficient and competitive on the international market.

To let the first Stage of Robikki Leather District become operative, as per the implementation program approved by all interested Ministries and Agencies, it is necessary define the structure of the lots and start the construction of the buildings according the relevant construction schedule.

To reach this goal it is imperative to know the tanning operators that will relocate their factories in the first Stage of the District, the tanning activity they will implement in the new district, their possible association and the selected covered building area.

The list of the tanners and the relevant tanning activity will permit IMC to define the typology of the buildings to be built and select, from the offer for the full range of buildings typology of the successful bidder, the modules necessary to fit with the requests of the tanners.

Estimated Cost Of The Buildings BY IMC (Tech.).

The cost of buildings for the total envisaged area of 85.000 m² that will be necessary to relocate the businesses of Magra El Eion has been estimated about 245.000.000 EGP, including the shells, the finishing, the landfill, and the

civil works necessary to link every single unit to the district area and facilities. It is corresponding to a maximum cost for square mt. of 3.178 EGP in total, including 1.506 EGP maximum for the buildings, 552 EGP maximum for further finishing, and 825 EGP maximum for the civil works necessary to link the unit to the other external facilities and civil works of the district , including the shared cost of the landfill¹.

Different estimates have been analyzed as per the following details, achieving the following summarized results

Cost Estimate Summary For Model (A)

(estimates by IMC tech.)

Item	Description	Total Price EGP		cost/m ²
First	Civil Work	11.374.200,00	0,00	1.313,72
Second	Finishing	1.618.370,00	0,00	186,92
Third	Sanitary	186.100,00	0,00	21,49
Fourth	Electrical work	1.072.056,00	0,00	123,82
		14.250.726,00	0,00	1.645,96

¹ Refer to “Financial Model” Fixed assets: *“The building structures of the tannery units are the guidelines of modern and efficient operative solution foreseen for the industrial activities of the district. The single private units are part of a common whole design and construction standard. Also in order to reach this goal, some financial support from GOE are foreseen. Purchase of the tannery, including building shell (Euro 18,3 million), internal finishing and landfill shares (Euro 6,7 plus 10 million) EURO 35.000.000. The envisaged area is about m² 85.000 for the hypothesis of 90 mn/jt² yearly production, and m² 45.000 for 50 mn/jt² yearly production.”*

Area of Model (A) : 8.640 m² Civil work

Item	Description	Unit	Quantity	Unit Price L.E	Total Price L.E
1	Excavation for foundation	M ³	25500	15	382500
2	Filling up with pure sand	M ³	21500	25	537500
3	Plain concrete for foundations Ingredients : 0.8 ³ gravel 0.3 ³ sand 250 cement	M ³	720	200	144000
4	Casting of plain concrete layer under foundation and flooring , 10 cm thick	M ²	9100	40	364000
5	Plain concrete floor tiling 15 cm thick , 2x2 wide .	M ²	8650	60	519000
6	Construction of buildings 25 cm thickness , made of 25 x 12 x 6 cm solid cement bricks .	M ³	350	250	87500
7	Construction of buildings , 12 cm thick, made of solid cement bricks (25x12x6 cm)	M ²	50	50	2500
8	Asphalt horizontal insulating layer, 2cm thick .	M ²	220	10	2200
9	3- coating paint , horizontal and vertical insulating layer of bitumen	M ²	3700	15	55500
10	Casting of reinforced concrete for foundations .	M ³	770	700	539000
11	Reinforced concrete structure .	M ³	10	950	9500
12	Reinforced concrete ceilings	M ²	4320	150	648000

Finishing

Item	Description	Unit	Quantity	Unit Price L.E	Total Price L.E
1	Plain concrete lining	M ³	1	250	250
2	Plain concrete in thickness as per drawings	M ³	18	300	5400
3	Construction of buildings made of solid concrete bricks	M ³	1500	170	255000
4	Buildings of 12 cm thickness. Buildings made of solid concrete bricks, of 12 cm thickness .	M ²	300	22	6600
5	<u>Insulation work</u> Floor insulating layer (of tar & bitumen)	M ²	8400	30	252000
6	<u>Flooring :</u> Ceramic tiling for W.C.	M ²	300	50	15000
7	<u>Plastering :</u> Mortar plastering for facades	M ²	2100	25	52500
8	Cement rendering for outer surfaces, 3 cm thickness.	M ²	260	12	3120
9	Cement rendering for internal walls and ceilings	M ²	2000	11	22000
10	Wall tiling : Wall ceramic tiling for W.C.	M ²	500	60	30000
11	Wall ceramic tiling	M ²	5000	90	450000
12	<u>Painting :</u> Plastic painting for walls & ceilings	M ²	2000	18	36000
13	Carpentry work	M ²	70	350	24500
14	Metal doors & windows	M ²	925	400	370000
15	Metal doors & windows	M ²	8	8000	64000
16	Metal doors & windows	M ²	4000	8	32000
Total					1618370

Sanitary

Item	Description	Unit	Quantity	Unit Price L.E	Total Price L.E
1	Sanitary installations water closet (Wash-down), cisterns, joints bushings, fittings, taps, pipes accessories, etc.	PCS	6	1500	9000
2	Eastern water closet with fittings & accessories	PCS	26`	1200	31200
3	Urinals, marble partitions, taps, cisterns, pipes etc.	PCS	10	1500	15000
4	Sanitary installations lavatory basin, cistern , tap , cantilever joints etc.	PCS	26	1000	26000
5	Cistern , pipes & fittings	PCS	20	200	4000
6	Showering taps with fittings	PCS	26	200	5200
7	Gulley trap with fittings	PCS	4	200	800
8	Laying of underground galv. Iron pipes with insulation . 1.5 inches	M	5	50	250
9	Laying of underground galv. Iron pipes with insulation . 2.0 inches	M	5	70	350
10	Laying of underground galv. Iron pipes with insulation . 3.0 inches	M	100	100	10000
11	Semisphere drain	M	50	300	15000

Sanitary

Item	Description	Unit	Quantity	Unit Price L.E	Total Price L.E
12	Cast iron pipes on walls and under ground	M	5	150	750
13	Cast iron drain pipes. 3 inches diam.	M	5	170	850
14	Cast iron pipes 4 inches diam	M	100	200	20000
15	UPVC pipes, 4 inches diam	M	5	100	500
16	UPVC pipes, 6 inches	M	100	150	15000
17	Inspection chamber (60x60 cm)	PCS	6	1000	6000
18	Inspection chamber (90x90 cm)	PCS	4	1200	2800
19	Valves chamber	PCS	1	1400	1400
20	Valves chamber	PCS	2	1500	3000
21	Oil and grease trap tank	PCS	1	15000	15000
22	2 Chromium solution tank	PCS	1	2000	2000
Total					186100

Electrical work

Item	Description	Unit	Quantity	Unit Price L.E	Total Price L.E
1	Main distribution board (MLP- A)	PCS	1	20000	20000
2	Sub-distribution board (LP- A1)	PCS	1	1960	1960
3	Sub-distribution board LP-A ₂	PCS	1	1820	1820
4	Sub-D.B for lighting (LP-A5& LP-A8)	PCS	2	4075	8150
5	Sub-D-B for lighting (LP-A10)	PCS	1	1615	1615
6	Sub-D-b for lighting (LP- Aa,A6,A7,A9)	PCS	4	3970	15880
7	Sub-D-b for lighting (LP-A3)	PCS	1	3366	3366
8	Sub-D-b for lighting (LP-A11)	PCS	1	1645	1645
9	Sub-D-b for lighting (LP-A17- LP-A13)	PCS	2	2500	5000
10	Sub-D-b for lighting (LP-A12)	PCS	1	1500	1500
11	Sub-D-b for lighting (LP-A14, A15)	PCS	2	4135	8270
12	Sub-D-b for lighting (LP-A16)	PCS	1	2770	2270
13	Low voltage cable 2(3x240+120)+1x240mm ²	M	20	1000	20000
14	Low voltage cable 4x25+1x16mm ²	M	500	90	45000
15	Low voltage cable (4x35)+1x16 mm ²	M	50	116	5850
16	Low voltage cable 4x10+1x10mm ²	M	150	30	7500
17	Low voltage cable 4x16+1x16mm ²	M	200	77	15400
18	Cable tray, width 60x10	M	25	300	7500
19	Cable tray, width 40 x 10	M	345	270	93150
20	P.V.C pipes 6"	M	40	120	4800
21	P.V.C pipes 3"	M	550	35	19250

Electrical work

Item	Description	Unit	Quantity	Unit Price L.E	Total Price L.E
22	P.V.C Pipes 2.5"	M	350	27	9450
23	Lighting feeding circuits	PCS	630	340	211200
24	power socket feeding circuits	PCS	12	1000	12000
25	Socket feeding circuits	PCS	90	360	32400
26	Lighting feeding circuit	PCS	84	110	9240
27	Lighting feeding circuit	PCS	12	330	3960
28	Lighting fixtures, flurescent 2x40w	PCS	84	350	29400
29	Lighting fixtures, mercury vapor 250 w	PCS	15	600	9000
30	Lighting fixtures, mercury uapour 400 w	PCS	605	750	453750
31	3-ph power sockets	PCS	12	210	2520
32	1 – ph sockets	PCS	101	50	5050
33	2- Way lighting switch	PCS	1	42	42
34	1- Way lighting switch	PCS	12	27	324
35	2-way lighting switch IP 54	PCS	8	100	800
Total					1072056

Estimated Costs for Civil Work Construction

For Establishing Tannery Plant

Abbreviations:

P.C.	= plain concrete	h.l.	= hydrated lime
R.C.	= reinforced concrete	g.m.	= gypsum
C.	= Portland cement	p.	= plaster
g.	= gravel with 3cm max size	mix.	= mixture
S.	= coarse sand free from silt and dust.	admin.	= administration

Essential information and Remarks:

- The plant is composed of 3 halls, each 18.00 m wide and 120.00 m long with total area 6480 m², out of it production area has 5940 m² and managing, industrial services and stores blg. having 540 m².
- The production halls and industrial services and stores blg are composed of 3 steel structure trusses, height of beams is + 7.00 m longitudinal center lines are 6.00 m, covered with sandwich plates 40mm thick Icon type to secure efficient protection from sun heat.
- Outside walls along axes A & D built with bricks 25 cm thick (either clay bricks or cement hollow blocks) and height + 4.50m Rest of height is covered with windows having height of 1.80m and plastic corrugated sheets of height 0.70 m. to get better natural aeration and lighting. (See sketch No.1).
- Internal partitions built as outside walls on axis B up to axis 16 and on axis C up to axis 18 with a height of + 4.50m.
- Walls on axis 1 are 25cm thick and height + 4.50 m. Rest of height is covered with windows of height 1.80 m and plastic corrugated sheets up to the bottom of the truss top frame (see sketch No.2).
- Steel columns of axes A, B and C to be covered with R.C. of light steel reinforcement up to a height of + 4.50 m to protect the steel from water inside halls number 1 and 2. Special chemicals minimizing the porosity to be added to the concrete mixture.
- Four two parts sliding doors of 5.00 x 5.00 m to be installed, half on axis A and rest on axis D, their location to be determined according to positions of machineries and instruments inside halls no 1 and 2.
- Six steel service doors 1.25 x 2.00m each to be installed through axes B and C to facilitate movement of persons between the production halls, to be located according to internal plan.
- Estimated costs for civil works for admin., production services and stores blgs. are in independent calculations.
- The admin. blg. to be built of R.C. frame with two storeys, each has a net height 3.50 m. Ground floor is comprised of changing clothes hall, W.C, praying room, wages and workers affairs, buffet and entrance of the blg and stairs to first floor (see sketch no. 6) First floor is comprised of nine rooms with different areas 3 complete W.C. and another one attached in direction room, a buffet, waiting hall and central air conditioning room. (see sketch No. 7)

The two ceilings of ground and first floors to be designed to bear a load of 200 kg/m².

- Production service bldg to be built of R.C. frame with one storey, and a boiler house, its roof is the same of the steel structure truss. Steel stairs to lead to first floor, its roof is also the same of the truss, small truss acts as skylight is crossing all along the central frames of steel truss over hall no 2 from axis No. 1 to axis no. 21 including the roof of first floor of this bldg. covering length of 18.00 m for natural aeration and lighting. (See sketches No.1 and 5).
- Stores bldg. To be built of R.C. frame with one storey, first floor roof is the same of the steel structure truss, steel stairs leading from ground floor to first floor.
- Both ceiling slabs of ground floor of the up mentioned bldgs. to be designed to bear a load of 600 kg/m².
- Industrial suction fans with diameter of 50 cm to be installed in places which must be aerated (see sketch No.5).
- Suction fans with diameter 30 cm to be installed in W.C. of first floor of admin. bldg.
- Price of excavation per m³ is based on consideration that the soil is normal and contains no rocks.
- The site location must be supplied by water and electric power 3 phases, 380V. resources.
- Instruction of Civil Defense Department to be considered for fire fighting means and different tools.
- The estimated prices are based on prices of components and materials during August 2004. Any change of these prices shall be considered and recalculation being taking over.

Other Estimations

Estimated Costs for Civil Works of Production Halls (Estimated by Nureldin Office)

Item	Description	Qty	Unit	Unit Price L.E	Total L.E	Remarks
1	Excavation in normal earth up to -2.00 m.	688	m ³	13.50	9288	
2	Refill around footings and ground beams	353	m ³	5.00	1765	with cleaned excavated soil sprinkled with water and compacted in layers of 0.2m with mechanical compactor.
3	Replace by quarry S.	78	m ³	40.00	3120	Foundation pits to be filled with water 24hrs before S replacement
4	P.C. for foundations	78	m ³	270.00	21060	mix. 0.8 m ³ g. +0.4m ³ S+ 250kgs C.
5	R.C. for foundations, ground beams and short columns	176.5	m ³	650.00	114725	mix. 0.8 m ³ g+ 0.4 m ³ S + 350 Kg C average reinforcement steel 95kg/m ³ . min cover for foundation r. steel 7cm of concrete.
6	R.C. to cover steel frame columns	24.5	m ³	450	10800	mix. same as above, but r-steel 46.5kg/m ³ . wood Shelter to be rubbed smooth and chemicals decreasing porosity to be added to the mix.
7	Transport excess soil of excavation out the site	72	m ³	13.00	936	Transportation to general refusal pits.
8	Building with clay brick or concrete blocks thickness 25cm, height + 4.50m.	468	m ³	170	79560	Mix 1 m ³ S + 300 kg C.

Item	Description	Qty	Unit	Unit Price L.E	Total L.E	Remarks
9	Plastering internal walls getting smooth surface (optional)	1872	m ³	11.00	(20592)	mix for splashing 450 kg C/m ³ S m. for plastering 300 kgC/m ³ S
10	Plastering external walls	1017	m ³	16.00	16272	mix for splashing and coarse plastering as above m. for surface plastering 8 parts p. + 1 part c. + 2 parts lime stone powder + 1 kg colour oxide.
11	<p>Internal lighting:</p> <ul style="list-style-type: none"> - fluorescent set of 4 lamps 1.20m. factories type - fluorescent set of 3 lamps. 1.20m fact. Type 	80	No.	485	38800	See sketches No. 4 and its supplement for details. Price includes connection cables, 3 switch boards, hanging and fixing elements. Main electric supply cable to be extended up to inside the building.
		54	No.	435	23490	
1	<p>Steel Works:</p> <p>Frame truss composed of:</p> <ul style="list-style-type: none"> - columns IPE 300 length 7.15m. - trusses IPE 270 - columns of back Facing IPE 200 - steel plates thickness 8,10,12 and 16mm - vertical bracing angles 100x100x10 mm - horizontal bracing angles 80x80x8mm 					Welding between columns, trusses and fixing plates to be 8 mm diameter. Other welding to be 6 mm diameter.

Item	Description	Qty	Unit	Unit Price L.E	Total L.E	Remarks
	- horizontal studs angles 70x70x7mm - perlins C140 - tie rods for perlins Ø13 mm - fixing bolts steel 8.8 and or 10.4. - steel rodsØ 20mm for fixation st. columns with short R.C columns	143,5	Ton	3166 aver.	454321	
	- skylight all along medium hall composed of angles 70x70x7mm 60x60x6mm and steel plates 8mm	21	no	585	12285	
	Workmanship steel structure, connection, erection and painting with epoxy paint.	143.5	Ton	6330	908355	all steel sectioned to be well brushed with steel brush to eliminate rust and welding powder, painting two faces with antirust paint and two layers, one base and other epoxy
2	Top covering with sandwich panels Icon type 40mm thickness	5574	m.l	166	925284	Including erection.
3	Window manufactured of different Crytal sections height 1.80m., length 5.85m with reinforced					See sketch No.1.Axis A and D

Item	Description	Qty	Unit	Unit Price L.E	Total L.E	Remarks
	5mm glass. Opened and closed with mechanical device by hand at a height +1.5m. Same but length 5.80m Same but length 5.90m (optional)	32 6 3	No No No	2800 2750 2850	(89600) (16500) (8550)	ww 3 ww 1 ww 2 } see sketch no. 2 for details.
4	Channels for collecting rains Drain plastic pipes 6 in. Complete with clamps and supporting rods.	450 91 108	ml ml ml	48 36 57.5	21600 3276 6210	On Axes A, B, C & D made of steel sheets 1.5mm (cold drawn) flat width 0.8m, painted two layers with antirust paint. See sketch No.3 For axes A and D drainage central hall from axis B to axis A and from axis C to axis D.
5	Plastic corrugated sheets on back facing axis 1 same on Axes A & D height 0.7 m. (optional)	63 135	m ² m ²	60.00 60.00	(3780) (8100)	See sketch No.2
6	Doors - sliding two part door 5.00 x 5.00 m. - service door 1.25 x 2.00m	4 6	no no	1625 530	6500 3180	For locations refer to information and essential remarks

Summary of Cost of Construction of Production Halls and the Part Shared with Store Building and Production Service Building

N.B: Horizontal plan for production halls, store and production service buildings covered with steel structure and sandwich Icon type panels has an area of 5940 m².

This to be considered when calculating average cost per square meter see sketch No.1.

Total cost for execution of production halls:

2,660,827	L.E	average cost/m ²	447.95	L.E
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Cost for options

147,122	L.E	average cost/m ²	<u>24.77</u>	L.E
		Total	472.72	L.E

Add to previous average following:

3% Design fees (execution detailed drawings conditions and specification notebook).

5% consultant fees (participation in selection of execution offers, looking after execution phases, revision of general contr. regular invoices and final invoices, approval samples of execution elements).

25% Administration costs and financial expenses for general contractor (social insurance, bank fees and etc.)

8 % Profit border for general contractor.

41% hence average cost /m².

Add selling tax 2.9%	666.535	L.E
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Hence average cost/m².

686.00	L.E.
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**Estimated Costs for Civil Works For Administration, Production Service
and Stores Buildings**

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL	REMARKS
1	Excavation in normal earth up to -2.00 m.	514	m ³	13.5	6939.00	All remarks previously mentioned in estimated costs for execution production halls to be considered.
2	Refill around footings and ground beams	294	m ³	5.00	1470.00	
3	Replace by quarry S	57	m ³	40.00	2280.00	Any silt foam appears to be skimmed
4	P.C for foundations	57	m ³	270.00	15390.00	
5	R.C. for found ground beam, columns, beams and slab of ground floor	319	m ³	650.00	207350	
6	R.C for columns, beams and slab of first floor	107	m ³	675.00	72225	
7	P.C. for grounds of ground floor	972	m ²	45.00	43740	mix. 0.8 m ³ g + 0.4 m ³ S + 250 KgC
8	Transport excess soil of excavation out the site	60	m ³	13.00	780	
9	Building with clay brick or concrete blocks, thick. 25cm.	150	m ³	170.00	25500	Axes A,B, C, D, 18 and 21
10	Building, Clay bricks or concrete blocks 12cm thick.	710	m ²	45.00	31950	Internal partitions
11	Plastering internal walls	1770	m ²	11.00	19470	Except W.C.
12	Plastering ceilings	1654	m ²	16.00	26464	mix. 30 kg. g.m +4kg live lime
13	Plastering external walls	594	m ²	18.00	10692	
14	Floors for ground floor of admin. Building					
	1- ceramic tiles 150 x 300 x 6 mm	128	m ²	50.00	6400	For praying room and changing clothes room.
	2- Mosaic cement tiles 30 x 30 x 3 cm	135	m ²	22.00	2970	

15	Floors for ground and first floors of:					
	- production services blg. - stores blg. - boiler house	585 634 27	m ² m ² m ²	28.00 28.00 88.00	16380 17752 2376	Mosaic cement tiles with basalt grains 30 x 30 x 3cm Same as above - Ceramic tiles 20x 20 x 2cm Sornaga type.
16	Workers W.C. Hand washing basin men urinal	15 3 10	no. no. no.	- - -	- - -	each contains toilet set with flasher, water mixer and shower 3.00 x 0.45 m.
	Step up platform for pray wash with 8 water taps. Complete with water and sewage	1	no.	- 1ump-sum	-26500	See sketch no. 6 for details
17	Floors of first floor of admin. building - Of buffet, WC and air condition	440 73	m ² m ²	80.00 55.00	35200 4015	First class ceramic tiles 500x500x8 mm Ceramic tiles 300x300x6mm
18	Covering walls of W.C of workers and buffet in ground floor	195	m ²	28.00	5460	Ceramic tiles 150 x 150 x 5 mm
19	Covering walls of W.C. and buffet in first floor	104	m ²	55.00	5100	Ceramic tiles 150 x 300 x 6 mm
20	Complete W.C. inside general manager office	1	Lump Sum		3350	Including suction fan Ø 300 mm and wall covering with ceramic tiles.
21	Complete W.C. for employees in first floor	3	no.	3000	9000	Composed of toilet set, wash basin towel rack, mirror and suction fan. Outside, 2 urinals + 3 wash basin
22	Entrance main door Securit glass 8 mm	1	no.		1150	In two parts, total dimension 1.80 x 2.15 m complete with lock and handle.
23	Marble tiles for admin. building fletto type	6	m ²	80	480	400 x 400 x 20mm (for the entrance)
24	Stair to first floor marble fletto type	32.4	ml	85	2754	24 stairs 320 x 1350 x 40 mm, verticals: 125x1350x20 mm.
	- marble feltto tiles for 3 step up 1.35 x 1.00 m	4.05	m ²	80	324	450 x 500 mm
	- side wall cover marble strips, fletto type	7.80	ml	10	78	100 x 20 mm
25	Hand rails made of shaped steel sections	13	ml	450	5850	Height 900 mm.

26	Painting internal walls and ceiling	3424	m ²	12	41088	2 layer paste, 1 layer base coat, 2 layers plastic rubber paint
27	Internal lighting for admin. bldg.	Lump sum			41626	See sketches 8 & 9 for details
28	Internal lighting for industrial services bldg.					
	- ground floor	17	no	550	9350	See sketch No.8 for details
	- First floor	16	no	585	9360	See sketch No.10 for details
29	Internal lighting for stores bldg.					
	- ground floor	15	no	550	8250	See sketch No.8 for details
	- First floor	15	no	585	8775	See sketch No.10 for details
30	Steel section stairs leading to first floor for each of industrial services and stores bldg	2	no	3500	7000	Frame 140, stairs notched steel sheets 4.5mm width 1.00m, handrails pipes Ø 50mm with verticals pipes Ø20 mm.
31	Steel section windows for aeration, type w10 on axes 16,18 and 21 first floor	78.75	m ²	50	3937.5	See sketch No. 5 frame < 40 x 40 x 4 mm, shaped steel sections flats 15 x 6 mm, expanded steel wire net sheets, heavy type.
32	Suction fans Ø 500mm motor 750 w., rpm2800 (optional)	6	no	1200	(7200)	For ground floor of admin. bldg. and production services bldg. See sketch No.5
33	Ceiling fans Ø 1.10m (optional)	30	no	700	(21000)	For ground floors of admin., production services and stores bldg.
34	<u>Doors</u> 1- Steel, two parts sliding door 1.75x2.15m type d1 complete with upper and lower rails handles and locks, painted. 2- Made of wood	3	no	500	1500	See sketch No. 5 for details Made of square shape 40x40x2mm and flat sheet 1 mm thick. See sketches 5, 6 & 7 for details.
	Type d2	4	no	560	2240	2 parts 1.40 x 2.00 m.
	Type d4	13	no	312	4054	0.80 x 2.00 m.
	Type d5	5	no	390	1950	1.00 x 2.00 m.
	Type d6 Complete with locks and handles, painted.	15	no	220	3300	0.70 x 1.75 m, up 20 cm from floor

35	Windows:					
	1- steel Crytal sections + 5mm reinforced glass completely painted.					See sketches 5, 6 & 7 for details
	Type W1	13	no	848	11026	4 parts 4.00 x 0.80 m
	Type W2	3	no	530	1590	2 parts 2.50 x 0.80 m
	Type W3	3	no	954	2862	3 parts 3.00 x 1.20 m.
	Parts are opened through horizontal axes with a mechanical device					
	2- Aluminium sections double glaze 4 mm glass					
	Type W4	6	no	1800	10800	3.00 x 1.20 m, two sliding parts and two fixed.
	Type W5	4	no	1200	4800	2.00 x 1.20 m, one sliding part and one fixed.
	Type W6 (glass single)	1	no	400	400	1.00 x 0.80 m, opened through horizontal axis
	Type W7	2	no	2400	4800	4.00 x 1.20 m, two sliding parts and two fixed
	Type W8	1	no	900	900	2.50 x 1.20 m fixed.
	Type W9	1	no	2160	2160	4.00 x 1.80 m fixed.
36	Insulating top ceiling of admin. bldg. - one layer silomat insulating rolls - steropol sheets 40mm - cement tile 20 x 20 x 2 cm. Mortar to fix c. tiles 1m ³ S + 250KgC +105kg hl.	540	m ²	lump sum	37800	Four bricks to be built around boundary of top ceiling, 12 cm thick. Make sloping in cement tile setting to drain rains through four gutters on axis A and to outside through vertical 4 inch plastic pipes.

Remarks:

- Floor R.C slab of first floor of production service and stores bldg to be designed to bear 600 kg/m².
- Admin. bldg designed. As R.C. frame in two stories. Some R.C. columns are attached to columns of the steel structure so foundations of such steel columns been modified to bear the extra loads. Slab of first floor designed to bear 200 kg/m².
- Water supply to these bldgs. and sewage drains connections to be within the boundary of the bldgs.
- Estimated cost for R.C. construction of admin., production service and stores bldgs eliminates the areas occupied by stairs leading to first floors of these buildings, and that of boiler room. (see sketch No.1).
- Hence the areas of the three bldgs is 972 m² for ground floors plus 1107m² for first floors with total area 2079 m² which to be considered when calculating average cost per meter square.

Summary of Cost of Construction of Administration, Production Services and Stores Buildings

Total cost for the three blgs:

L.E	828958	average cost/m ²	398.73	L.E
-----	--------	-----------------------------	--------	-----

Cost for options

L.E	28200	average cost/m ²	13.56	L.E
-----	-------	-----------------------------	-------	-----

		Total	<u>412.29</u>	L.E
--	--	-------	---------------	-----

Add to previous average following:

3% Design fees.

5% Consultant fees.

25% Administration and financial expenses for general contractor.

8 % Profit border for general contractor.

<u>41%</u>	average cost /m ² .	581.3	L.E
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Add selling tax 2.9%	average cost /m ² .	598.2	L.E
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i.e. L.E. 600/m²

Suggestions:

1 -Stainless steel reservoir 1 m³ capacity can be put high in boiler house and pass through a coil of stainless steel 1 inch pipe passing through steam to heat up the water inside the tank and hence supply W.C. in both ground and First floors with hot water without any consumption of electric or gas energy and no maintenance required. All controlling devices for rate of water flow and temperatures are installed. Good insulation fore tank body and hot water piping are fitted.

Estimated cost shall be within 28000 L.E.

2 - Central air conditioning unit can be erected over first ceiling of admin. building together with supplying ducts of air to different rooms.

Air conditioning room in sketch No.7 can be fitted with steel stairs leading to the roof of this building and this room to be used to store cleaning elements for the blg.

8.2 CETP

Main Interventions for limiting the negative environmental impact of the district

Stream segregation

Each tannery must segregate the high salinity (first washing, soaking and picking liquors) and chrome (spent tanning and re-tanning liquors) waters. The rest of liquid wastes will be mixed and discharged as general effluent. Tanneries using Chrome in the tanning and/or retanning process should also install a storage tank of suitable capacity for collecting the spent liquors.

Removal of coarse materials

The installation of a fix screen (usually 20 mm spacing) before the inlet to the common sewer will be imposed by the CETP management.

The Common Effluent Treatment Plant (CETP)

Final disposal of the treated effluent of the district

- i. no water courses are available in the region: therefore treated effluent of the district must be disposed onto the soil, i.e., used for irrigation.
- ii. the salinity represents the main obstacle to the irrigation use of the tannery effluents. Salinity cannot be reduced by the traditional treatment processes. At the present, the elimination of these water through solar evaporation is a possible treatment alternative already implemented on industrial scale in some hot regions (e.g. India-Madras, South Africa and Namibia).

Phased implementation

Because of the uncertainty about the number of Old Cairo tanneries which will relocate in the new district, possible variation in production capacities and the fact that the total relocation will last several years, the CETP implementation has also been phased.

General treatment scheme

The block diagram of the treatment process proposed for the leather district is illustrated in Figure 1.

The tannery effluents will be segregated in 3 separate flows:

- chrome waters,
- high salinity waters,
- other waste waters (general).

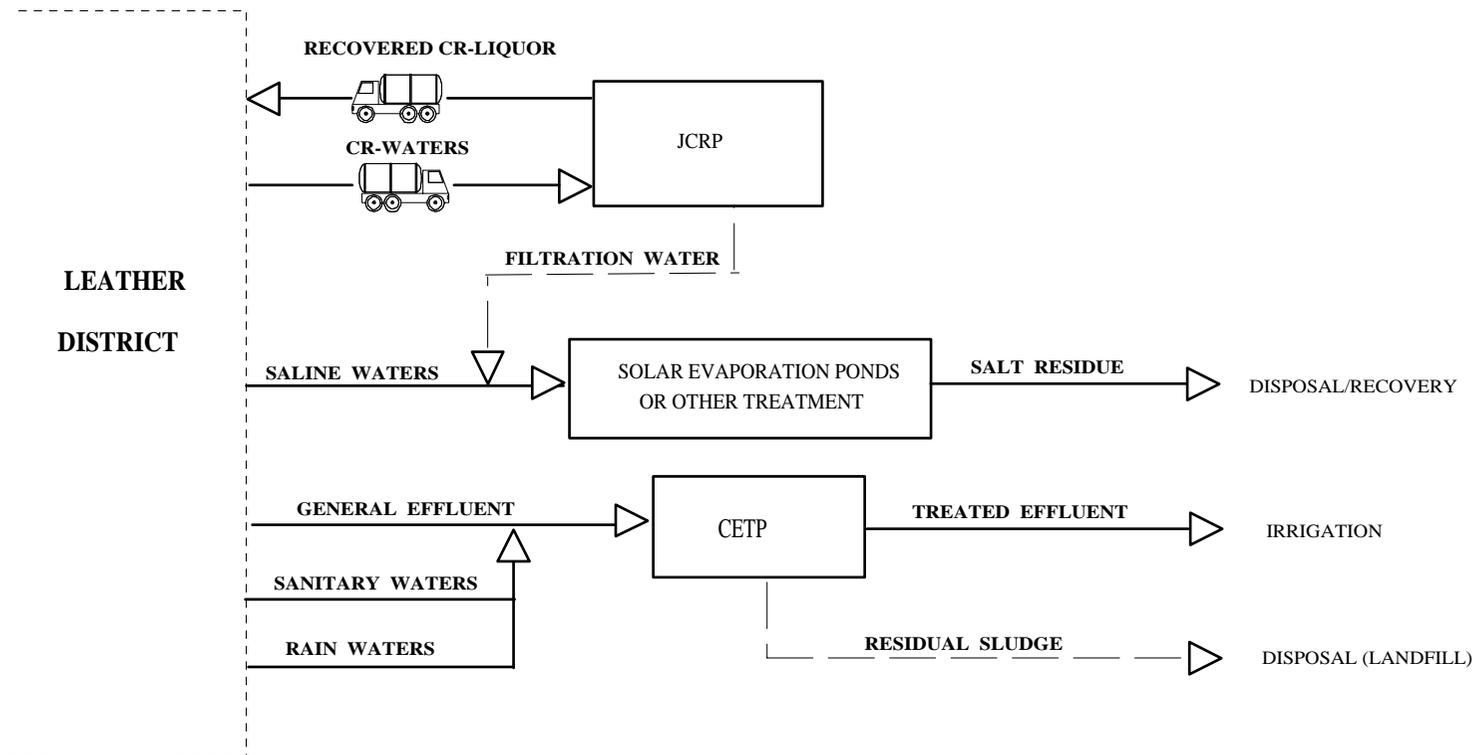


Figure 1 : General treatment scheme for the district wastewaters

The sewer system of the district is constituted of two main lines:

- high salinity waters
- general effluent

The spent chrome liquors segregated and stored at the factory' site are periodically transported by tank truck to the joint chrome recovery plant.

The sanitary waters of the district will mixed with the industrial effluent.

In consideration of the dryness of the region, rain waters have been considered irrelevant in the CETP design.

Joint Chrome Recovery Plant (JCRP)

A relevant part (20% ca.) of the offered chrome is not fixed (exhausted) during the tanning and is discharged in the spent liquors. Due to the low solubility of the hydroxide, trivalent chromium is easily separated by precipitation when mixed with other alkaline tannery wastes. Nevertheless the separate treatment of the chrome-containing liquors is always recommendable (and often imposed by the local environmental authorities) for limiting the Chrome content of the residual sludges and facilitating their final disposal or possible use in agriculture.

Every time that the favourable conditions exist (i.e. various tanneries in a relatively limited region) the implementation of a JCRP should be preferred to the construction of individual plants at the factory' sites.

In fact the common recovery offers both technical and economical advantages:

- Economy of scale (minor implementation and operation costs).
- Limited troubles at the factory (tanner' care is limited to the proper segregation of the spent Cr liquors).
- More reliability and efficiency (high mechanised process, qualified personnel and laboratory facilities, assure a properly "regenerated" and constant product).
- Reliability and effectiveness in the protection of the environment (better guaranty of a proper operation and maintenance).

Description of the proposed process

Each tannery must implement a proper system for the separation of effluents containing Chrome and install a storage tank. These concrete tanks are generally placed under ground and fed by gravity. The dimensions of the tank depend both on the daily volume of wasted Cr-liquors and on the capacity of the transport lorries.

The collection and transport by lorries of these liquors is dictated by the necessity of controlling their characteristics and establishing the quantity of Chrome to be given back to each tannery after the common treatment.

The incoming lorry is weighted (on weight bridge) before and after the discharge. At the moment of the discharge a sample of the liquid is taken for analysing its Cr_2O_3 content.

After coarse filtration the incoming liquor is pumped to the fine screen and the equalization/storage tank.

The equalization tank is equipped with mechanical mixers in order to facilitate the homogenisation of wastes and to avoid the sedimentation of solids. The equalised liquor is pumped to the fine screen and drained into the neutralisation tank. The trivalent chrome is quantitatively precipitated with alkali (NaOH solution) as hydroxide at a pH level of approximately 8.

The chrome hydroxide suspension is filtered (recessed plate filter press) and the filtration water discharged to the treatment for saline waters.

The chrome hydroxide cake is re-dissolved with concentrated sulphuric acid obtaining a chrome liquor that after a final filtration (polishing) from impurities is given back to the tanneries for reuse.

The chrome recovery process proposed for El Robikki is that adopted in other leather districts in Italy and other countries (e.g., Argentina, Portugal, and Spain).

It offers the advantage of obtaining a more clear, concentrate and regular recovered liquor; from other less-sophisticated systems, like the chrome precipitation with magnesium oxide (MgO) adopted e.g. in Madras-India, the content of the chrome and impurities in the liquor may amply fluctuate causing troubles for its reuse.

High Salinity Waters

The necessity to segregate and separately treat these effluents has been already discussed.

Different sophisticated and expensive systems could be imagined for removing salts from water (e.g., reverse osmosis, crystallisation by evaporation/distillation, etc.), but none has been tested on tannery effluent and implemented on industrial scale.

Due to the favourable climatic situation at El Robikki, the segregation of the quantitatively most representative liquors (soaking and pickling) and the drying by solar evaporation can represent an adequate solution.

To estimate the efficiency and performance of such experiences is not easy, but the effectiveness of the process basically depends on the specific climate conditions (temperature and evaporation rate) and the proper segregation of the concentrated salted effluents at the tannery sites.

Similarly to the Chrome recovery, the careful separation and collection of the high saline wastes are essential for the successful operation of the system, limiting the volumes (and associated water) sent to the evaporation ponds and providing an effective salinity reduction in the residual effluent.

Description of the proposed process

On the basis of the experience in other countries, the pre-treatment of the saline waters before evaporation has been proposed. The treatment consists of a fine screening and pre-sedimentation of the liquors before entering the dams, and for increasing the efficiency of the evaporation process the first lagoon will be mixed by floating surface aerators. Aeration will also cause BOD reduction and limits the bad smell production.

After the mechanical pre-treatment the liquors are sent into a series of shallow dams and allowed to dry. The final drying dams will be filled to a max. water level of about 30 cm.

Treatment of the general effluent

With the term "general effluent" of the District the other tannery effluents and the waste waters from the by-product processing are indicated. All industrial effluents from the district will be preliminary treated inside the factories by means of coarse screens and grit chambers (optional) in order to prevent clogging of sewers. Automatic screens for the removal of coarse materials will be also installed at the CETP inlet in order to prevent clogging of pumps of the pumping station.

The quite complex treatment process proposed for El Robikki is dictated by the final characteristics (standards) imposed by the Egyptian Environment Affairs Agency (EEAA) for the use of the effluent for irrigation.

Primary treatment

After coarse filtration, effluents will be lifted by pumping to the fine screens and to the grit and grease removal chambers.

The effluents is piped by gravity to the equalisation and sulphide oxidation tank where hydraulic and chemical shock loads are buffered. To prevent settling and insure aerobic conditions in the tank, the liquors will be properly mixed and aerated through combined action of air injection and mechanical mixing. At the same time sulphide oxidation will take place.

The equalised effluent will be uniformly re-pumped to the spontaneous sedimentation.

Segregation & pre-oxidation of the concentrate sulphide liquors

This separation will be carried out by-passing to the storage tank the effluents entering the CETP during certain period of the day. In fact the complete and accurate separation of all sulphide streams is not required: the collection of a significant part of them will be sufficient to the scope.

After screening and grit removal, the concentrated sulphide effluents are by-passed to the sulphide storage and pre-oxidation tank equipped with

mixing/aeration devices (e.g., blower and air diffusers) for avoiding solid deposit and starting the oxidation of sulphides.

Gradually the segregated liquors are transferred to the equalisation tank of the general effluent treatment during the day. Two tanks working alternatively are implemented: one in filling and oxidation phase and the other in re-pumping phase.

The more uniform loading (COD, Suspended Solid and Sulphide) entering the CETP is the scope of this pre-treatment; the spent unhairing liquors contain not only sulphides but also important quantities (about 40% of the total loading) of suspended solids and COD. A more uniform distribution to the CETP of these highly polluted wastes will simplify the general treatment and increase its efficiency.

Furthermore, the high lime content assures a pH in the equalization tank within neutral/alkaline values throughout the day, so that the risk of offensive odours generated by the stripping of hydrogen sulphide (H_2S) is remarkably reduced.

The effluents from the equalisation and oxidation tank are transferred at regular flow to the spontaneous sedimentation tanks where the suspended solids settle as sludge and the clear supernatant is piped by gravity to the successive biological treatment.

Biological treatment

The biological treatment consist in two phases:

- de-nitrification (anoxic)
- removal of carbonaceous matter and nitrification (aerobic)

The settled effluent flows by gravity into the de-nitrification tank where joins the mixed liquor and sludge of the successive aerobic biological process. In anoxic conditions the de-nitrification bacteria demolish the Nitrate-Nitrogen from the oxidation of Ammonia and proteins into harmless Nitrogen gas (N_2) that is dispersed in the atmosphere. Submersible mixers provide the mixing and avoid the solids settling.

After the anoxic phase the effluent enters by gravity into the biological aeration tank where BOD removal and nitrification occur. The aeration tank is equipped with blowers and bottom air diffusers assuring the oxygen for the bacterial activity and mixing.

The mixed liquor (water and biological sludge) of the oxidation tank is continuously recirculated to the de-nitrification tank.

From the oxidation tank the effluent enters the secondary sedimentation tanks, where biological sludge settles and supernatant is discharged. The settled sludge is continuously re-pumped to the de-nitrification tank. The excess biological sludge is periodically discharged (by-passed) and sent to the sludge treatment.

The supernatant of the biological sedimentation flows by gravity into a lagoon where is mixed with domestic effluent before being used for irrigation.

The adoption of simple ground excavated pond (natural soil embankments) should be acceptable because of the absence in the region of underground waters that could be adversely affected by the salts of an eventual percolate.

Sludge treatment

The spontaneous sludge and the excess sludge from biological treatment are transferred to the thickening treatment and, after conditioning with chemicals, mechanically dewatered.

Because of the large volume of produced sludge, the implementation of sand drying beds for sludge dewatering has been considered neither technically nor economically feasible.

The sludge cake is transported to the final disposal site (land-fill) and the filtration waters piped back to the general treatment.

Characteristics of the Final Treated Effluent

Required characteristic of the final effluent

Parameters ⁽¹⁾	Unit	Treated effluent
pH	--	6.5 ÷ 7.5
COD	mg/l	100 ÷ 200
BOD	mg/l	10 ÷ 40
Suspended Solids	mg/l	50 ÷ 80
Sulphide	mg/l	nil ÷ traces
Trivalent Chrome (Cr ³⁺)	mg/l	< 1
TKN (as N)	mg/l	50 – 60
Ammonia Nitrogen (as NH ₄ ⁺)	mg/l	10 ÷ 20
Nitrate (as N)	mg/l	10 – 20
Oil & Grease	mg/l	10 ÷ 20
TDS	mg/l	2000 – 3000
Chloride (Cl ⁻)	mg/l	800 – 1200
Sulphate (SO ₄ ²⁻)	mg/l	500 – 800
Sodium (Na ⁺)	mg/l	600 – 800

(1) Typical for tannery effluents.

Cost

plant	equipment	civil works	commissioning	transport	total
JCRP (Joint Chrome Recovery Plant)	6.870.000,00	1.170.000,00	343.500,00	56.334,00	8.439.834,00
high salinity water	893.100,00	1.150.000,00	1.030.500,00	137.400,00	3.211.000,00
General treatment	16.350.600,00	6.400.000,00			22.750.600,00
Sludge treatment	8.244.000,00	7.600.000,00			15.844.000,00
Piping and wiring	6.870.000,00				6.870.000,00
total EGP	39.227.700,00	16.320.000,00	1.374.000,00	193.734,00	57.115.434,00

8.3 Forest

It should also be noted that the above costings do not include the establishment of the forest, where the output from the wastewater treatment facility will be deposited. GoE will set aside a considerable area of land to establish the forest and the cost of purchasing and planting the trees needs to be taken into account. The review of the Robikki Project should cover this point.

Technical assistance for the forest could be organised by:

UNIVERSITA DEGLI STUDI DI FIRENZE

Francesco Ferrini

(Full Professor of Arboriculture and Managements of Parks and Gardens)

Dipartimento di Ortoflorofrutticoltura

Viale delle Idee, 30

50019 - Sesto Fiorentino (Firenze) - ITALY

francesco.ferrini@unifi.it

Tel. 055 5254033 fax 055 5254017

gsm 349 8058012 - 338 7499780

8.4 Landfill

SLUDGE LANDFILL

Geological aspects

Introduction

Geological and hydro-geological parameters are determinant in the site selection and in the planning of a landfill.

The design of a landfill is, generally, strictly related to the following factors:

- a. physical state of the wastes to be disposed,
- b. morphology of the destined area,
- c. soil texture and, particularly, the depth of the water table.

On the point (a) it is necessary distinguish between:

- wastes with an high inner friction as municipal refuse, grit, screenings, coarse materials or similar;
- wastes with a low inner friction because of the low particle dimensions and/or high water content (quite usual situation in the case of mixed sludges from effluent treatment plants).

The points (a) and (b) are linked since, for domestic wastes and similar, it's possible to plan raising landfills on flat or with weak slope areas or on partially confined areas, on the original ground surface however.

For sludges and similar instead plan landfills in confined areas is needed, excavating or building earthen dikes containment on one or more sides, according to the morphology of available site.

An other possible method is the sludge mixture with proper soil or refuse, used as bulking agents. For various reasons, this method tested also for tannery sludges is currently no more used.

The main disadvantages are:

- need to design the landfill, also partially, below the ground surface in order to find on the site the soil for the interim and final cover (therefore sites with shallow water table must be avoided) ;
- high operation costs. The operation cost are affected by the fact that combination of sludge with domestic wastes or soil is an additional working operation before the final disposal. Furthermore, the mixture volume grows significantly (30-50%).

In the sludge/refuse mixture, stabilised or unstabilized sludges with a solid content of three percent or greater can be used.

Normally sludge content is approximately ten percent of the mixture in order to keep the favourable mechanical characteristics of the refuse.

This can be acceptable for municipal sludge, but it is completely unrealistic for medium/high production of tannery sludges.

The point (c) , finally, is related with the protection of the ground water. The characteristics of the soil texture sequence at the landfill area determines the necessity or less of using liners of impermeable natural clay or synthetic materials. When necessary, these sealing liners must be placed on the bottom and lateral sides of the landfill.

Sludge landfill

Sludge landfill can be defined as an engineered burial of wastewater solids originated by municipal or industrial processes.

The solids are disposed of in prepared surfaces or excavated trenches and finally covered with a layer of natural soil of 20-30 cm.

Sludge landfilling systems can be grouped into two general categories: area fill and trench fill methods.

In the area fill method, the sludge is placed on the original ground surface. This method is suitable (or mandatory) in areas where ground water is shallow but cannot be applied to high moisture sludges (for tannery sludge the dry solid content must be $\geq 30\div 35\%$).

An alternative is the combination of the previous and next methods, the landfill top and bottom lay below and on the original ground surface respectively. The system allows a better use of the available area and it is suitable for dry self-carrying sludge or solids.

The trench fill method involves excavating trenches so that sludge may be entirely buried below the original ground surface. Depending on the width, the trenches are defined as narrow (less than 3 m) or wide (larger than 3 m). This method can be applied to every kind of sludge.

Area Fill

The sludge (mixed or not with soil or refuses) is placed on the original ground surface. In the case of mixture with soil, substantial amounts of imported soil are required but the method may be an acceptable techno-economic compromise in areas where ground water is shallow or bedrock prevails and, therefore, excavation is neither possible nor required.

Adequate drainage and runoff control are necessary to prevent contamination of nearby surface waters. The sludges with a solids content of 30 % or less, can be previously mixed with soil to provide bulk and stability. At the filling area the mixture is placed in piles and then covered with 0.5-1 m of natural soil.

According to the morphology of the selected landfill site, confined area by earthen dike (containment method) can be applied. This method is suitable for either stabilised or unstabilized sludge.

Sludge is usually not mixed with a bulking agent (soil or refuse).

According to the type of equipment used, the interim cover will vary from 0.3 to 1.0 metres.

A rigid control of the leachate is required.

Trench Fill

Trenches are defined narrow if their width is less than 3 meters, wide if greater.

Narrow trenches are suitable for sludges with a relatively low solid content (3-28%); the wide for sludges with a solid content of 20% or greater.

For narrow trenches a final cover of 1 m ca. of soil is needed.

In the large the covered sludge will only be capable of supporting equipment when the solid concentration of the sludge exceeds 25 to 30 % and the sludge has been covered with 1 to 2 m of soil. The wide trenches method has two basic advantages: it is less land-intensive than the narrow trench method and ground water protection can be provided by liners. The use of liners permits deeper excavation.

The disadvantage is that sludges with solid content greater than 30-35% do not flow and extra effort is required to spread them uniformly in the trench.

Trench methods are especially suitable for unstabilized sludges since a daily cover is needed.

Co-disposal with refuse

The term co-disposal is used when municipal sludge is disposed of at the refuse landfill.

In this manner, sludge is mixed with refuse or with soil.

Sludge refuse mixture

Stabilized or unstabilized sludge with a solid content of three percent or greater is mixed with the refuse. Sludge content is approximately 10 % of the mixture.

The mixture is applied on top of the refuse at the operating front of the landfill. The sludge and refuse are thoroughly mixed before they are spread, compacted, and covered with soil. An interim cover of 0.3 meters and a final cover of 0.6-1.0 m. is commonly used.

Sludge / soil mixture

Sludge is mixed with soil and mixture is used as cover for a refuse landfill. This method requires stabilized sludge with minimum 20% solid content. It promotes vegetation growth over completed landfill areas without use of fertiliser. However, since the sludge is not completely buried, it may cause bad odours.

A final soil cover could be necessary for eliminating this problem.

For typical municipal sludge, the relations between landfilling site characteristics, sludge typology and disposal methods are reported in the following table.

Sludge and site conditions

(from Sludge Treatment and Disposal - EPA Process Design Manual - ed. 1979)

METHOD	Sludge solids content, percent	Appropriate sludge characteristics	Appropriate hydrogeology	Appropriate ground slope
Narrow trench	15 - 28	Unstabilized or stabilized	Deep groundwater and bedrock	< 20 percent
Wide trench	≥ 20	Unstabilized or stabilized	Deep groundwater and bedrock	< 10 percent
Area fill mound	≥ 20	Stabilized	Shallow groundwater and bedrock	Suitable for steep terrain as long as level area is prepared for mounding
Area fill layer	≥ 15	Unstabilized or stabilized	Shallow groundwater and bedrock	Suitable for medium slopes but level ground preferred

Diked containment	≥ 20	Stabilized	Deep or shallow groundwater and bedrock	Suitable for steep terrain as long as a level area is prepared inside dikes
Sludge/refuse mixture	≥ 3	Unstabilized or stabilized	Deep or shallow groundwater and bedrock	< 30 percent
Sludge/soil mixture	≥ 20	Stabilized		< 5 percent

Site characteristics

Site characteristics should be carefully surveyed and analysed to ensure the suitability of the site and the method of landfilling. Project design phase initiates after this preliminary investigation and must include detailed construction drawings and operating and maintenance plan details.

Site survey

The site plan should contain the following minimum information:

- boundaries of fill area and buffer zones.
- topographic features and slopes of landfilling area and buffer zones.
- location of surface water, roads, and utilities.
- existing and proposed structures and access roads.
- vegetation to remain and to be removed; areas to be re-vegetated.

Soil

Soil is an important determinant in the choice of an appropriate sludge landfilling site.

The soil characteristics should be thoroughly examined and mapped. The fundamental information in the design of a landfill includes soil geological survey in the possible areas: e. g. texture, structure, bulk density, porosity, permeability, moisture, stability, and easiness of excavation.

Some typical examples:

- rocky soil must be possibly avoided for excavation problems,
- pH and cation exchange capacity have a direct influence on heavy metal transport through the soil
(possible migration of metals must be considered to ensure protection of surface and ground waters).

Ground water

The ground water aquifers underlying the landfill site must be located. Depth of the aquifer under the various seasonal conditions should be determined at several locations. Other characteristics such as the direction and rate of the flow, the hydraulic gradient, the water quality, and present and planned uses should also be considered.

Location of the primary recharge zones is critical in protecting quality.

Shallow water table will complicate the landfill construction and the storage capacity of the area (underground digging is not recommendable).

Sub-surface geology

The geological structure below the landfill is also important in establishing the design parameters. Critical design parameters include the depth, distribution, and characteristics of subsurface soils in relation to stability and ground water transmissibility.

Climate

Climate can influence many factors in the design of landfills.

Climatic conditions effect the rate of organic decomposition, the composition and quantity of leachate and runoff, the day-to-day fill operations, and the generation of odours and dust.

Information such as seasonal temperatures, rain precipitation, evaporation, wind direction and speed and atmospheric stability, are also important in the landfill design and generally can be easily obtained from the local weather stations.

Land use

The present and possible future use of the landfill site and adjacent properties should be evaluated.

If the site is already dedicated to garbage or sludge disposal, it is unlikely that expanding it will result in adverse impacts. However, if the site is located in or near a populated area, extensive control measures may be needed to eliminate concerns and minimize any public nuisance which would depreciate the value of adjacent properties.

LANDFILL TYPE AND DESIGN

General design criteria are summarised in the following table.

Landfill design criteria

(from Sludge Treatment and Disposal - EPA Process Design Manual - ed. 1979)

Method	Sludge solid content %	Trench width, ft	Bulking required	Bulking agent	Bulking ratio (a)	Cover thickness, ft		Imported soil required	Sludge application rate, cu yd/acre (b)	Equipment
						Interim	Final			
Trench fill										
Narrow trench	15-20	2-3	No	-	-	-	2-3	No	1200-5600	Backhoe with loader, excavator, trenching machine
	20-28	3-10					-			
Wide trench	20-28	10	No	-	-	-	3-4	No	3200-14500	Track loader, dragline, scaper, track dozer
	≥28	10								
Aera fill										
Area fill mound	≥20	-	Yes	Soil	0.5-2 soil : 1 sludge	3	3-5	Yes	1000-14000	Track loader, backhoe with loader, track dozer
Area fill layer	≥15	-	Yes	Soil	0.25-1 soil : 1 sludge	0.5-1	2-4	Yes	2000-90000	Track loader, grader, track dozer,
Diked containment	20-28	-	Yes	Soil	0.25 soil : 1 sludge	-	3-4	Yes	4800-15000	Dragline, track dozer, scaper
	≥28	-	No	-	-	-	3-4			
Codisposal										
Sludge/refuse mixture	≥3		Yes	Refuse	4-7 tons refuse : 0.5-1 wet ton sludge	0.5-1	2	No	500-4200	Dragline, track dozer
Sludge/soil mixture	≥20	-	Yes	Soil	1 soil : 1 sludge	0.5-1	2	No	1600	Tractor with disc, grader, track loader

1 ft = 0.305 m 1 cu yd = 0.765 m³ 1 acre = 0.405 ha

Before the final method is selected, an estimate of net capacity and site life must be made for each alternative. If a selected site is adaptable for different methods of sludge landfilling, the criterion of the maximum utilisation of the area must be always adopted in the final choice.

If a daily sludge covering must be applied, the total generated solid volume will reduce the original site capacity for sludges. If various days are required to fill a trench, as result of low sludge production, and cover is required each day, then the ratio of sludge/covering soil will be less than for sites managing larger sludge quantities.

The amount by which the theoretical (net) capacity of the site is reduced varies with the landfilling method, the specific site, and the daily sludge generation rate.

8.5 Leather Technology Centre

The above costs also do not include the LTC, either in a temporary form at Magra El-Eion, or the permanent facility at Robikki. We understand the cost of having a temporary facility at Magra El-Eion has not previously been costed and this will represent a totally new cost. The cost of establishing the permanent facility has been estimated at EGP 35 mn, across the three phases. It has been reported that the agreement signed on 9th January 2005 included EGP 14 mn costs for Phase 1 of the Leather Technology Centre.

See the report of ASSOMAC on TSC.

8.6 Financial Model of Robikki District

Project Rationale

The financial model is tuned at about 90 to 100 million square ft of the designed production for the first phase of the Robikki envisaged output, but the break even point is reached also with a production of 40 to 50 million square ft per year only. The model is outlined with a mix percentage of sheep and goat skins and cow hides output. The production process is depicted within a framework that represent the district, with its compound of different tanneries and other intermediate workshop, like a unified single big production unit. The start up of the production will be implemented and stabilised in 5 years time.

Products And Capacity

The production plan is based on to 8-hour shifts per day for 300 working days per year,.

In this analysis the processing of sheep and goat skins, and cattle hides is assumed.

The designed initial production capacity of the plant is 30.000 skins of sheep and goats, and 6.000 hides of cattle per day, up to double.

The processing of raw skins is as follows: 60% sheep skin and 40% goat skin;

The sales programme is structured on the assumption that all semi finished hides and skins will be destined for the export market, while all finished products and rejects will be sold in the local market. This translates into 16,75% and 82,5% local and export for skins, and 40% and 60% local and export for hides respectively.

Project Cost And Financing

Some of the **outside infrastructures** are of GOE property and include water supply, electric supply, natural gas, networks (roads, water, sewage, electricity, telephone), common effluent treatment plant –CETP-), consultancy services for the set up of the district (for the TSC [Technology Service Centre], management, CETP, IMC Technical), construction works, general sewage pump station, TSC infrastructures, pilot tannery and leather factory, and the equipment of TSC, for an envisage amount of Euro 50,13 million (EGP/mn 345).

Assuming that the above named outside infrastructures will be transferred to the district stakeholders through different phases after the start up of the production, and will not be put on charge of the stakeholders during the five years start up phase, in nominal terms, the direct costs of the district, including the stock of input material necessary to start up the production in the first year, is to the tune of Euro **96,67 million (EGP/mn 664,12)**. The total value of the fixed assets to be implemented at Robikki is put at Euro **35 million (EGP/mn 240,45)** and the preliminary site preparation is put at **Euro 5 million (EGP/mn 34,35)**. .

Additional investments are estimated Euro 56,67 (EGP/mn 389,32).

Table: 19 Outside infrastructures' cost in Robikki

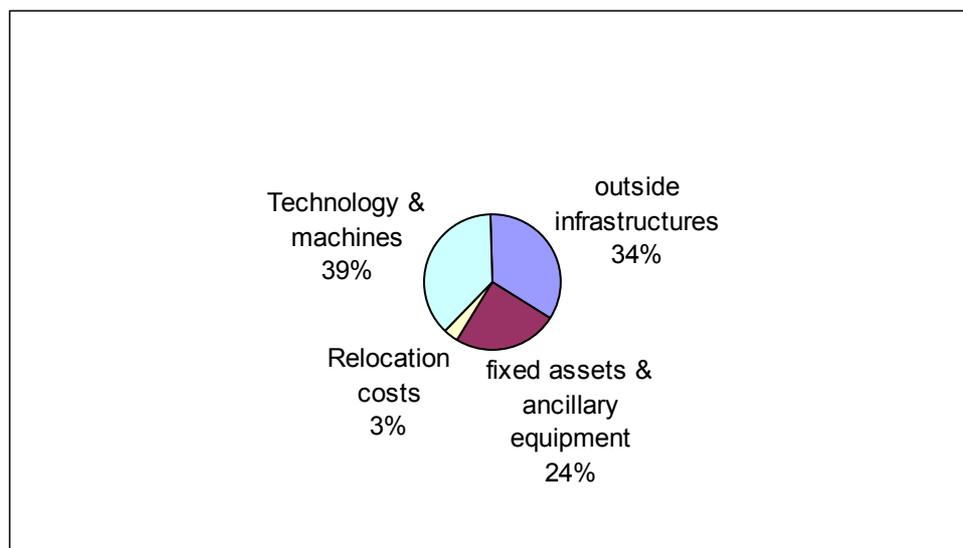
Description	Contracts EGP/mln	estimates EGP/mln	Comments
1 0 Outside infrastructure			
1 1 water supply	EGP 14,00		Inclusive of underground reservoir, water pumping station for 12.000 cubic mt/day, pipeline at compound limit;
1 2 Electric supply	EGP 7,00		electric supply: 4 cables from Badr City electric Station (8 km about) and execution of the distributor inside the first stage, including the erection of the cable line and distributor assembly
1 3 Natural gas	EGP 11,00		delivery and erection of a pipeline from 10th of Ramadan City 205 to the site of Robikki and construction of booster device (about 10 to 12 km)
2 0 networks: roads, water, sewage, electricity, telephone	EGP 58,60		network of roads inside the limit of first stage, including asphalt, potable water network and underground bassin with pumping station with emergency diesel generating set, compatible for the outcoming water; sewage assembly: two separate networks, one for High salinity water and the other for general domestic and industrial; electric wiring and fittings with about 20 transformers and switchboards, plus street lights through the 1st stage; telephone cables and network
3 0 common effluent treatment plant, CEPT		EGP 66,00	estimates according to the Assomac masterplan of 1997/98 chapter nr. 4 to be updated according to the tender scheme
4 0 Consultino management			
4 1 assistance	EGP 3,33		contracts for T:A.
4 2 TSC consulting for	EGP 0,70		contracts for T:A.
4 3 CETP consulting for	EGP 0,87		contracts for T:A.
4 4 IMC consulting for	EGP 2,00		contracts for T:A. Addendum
5 0 construction work		EGP 122,00	estimates for buildings according to the lay out, nr. 44 tanneries of different size, and nr. 9 glue workshops, nr. 2 leather board factories, nr. 3 service workshops, nr. 2 stores and subsidis (mosk, shopping center, other services)
6 0 General sewage pump		EGP 28,00	pumping station and pipeline to transfer the sewage from the compound to the CETP about 2 km far
7 0 TSC			
7 1 pilot tannery & leather factory	EGP 14,20		2 buildings
7 2 Building			1 building for business resources centre
7 3 equipment & furniture of TSC tanning			not estimates
8 0 equipment			not estimates

8	Supply of equipment		not estimates
8	erection of equipment		not estimates
8	3 Test, start up and commissioning		not estimates
9	Cost of land EGP 0 30/sq mt	EGP 140,00	estimates from Governorate
	<i>Sub total</i>	EGP 111,70	EGP 356,00
	<i>Total</i>		EGP 467,70
	<i>Euro</i>	Mln	€ 69,00

Table: 20 Abstract of outside infrastructures, fixed assets and equipment cost

ITEM	INVESTMENT	GRANTS	COST ASSIGN.TO ENTREPR.
outside infrastructures	EGP 345,00	-EGP 345,00	
fixed assets & ancillary equipment	EGP 240,45	EGP 0,00	
Relocation costs	EGP 34,35	-EGP 10,04	
Technology & machines	EGP 389,32	EGP 0,00	
total investment	EGP 1.009,12	-EGP 355,04	EGP 654,09
Special loan rates and collateral			-EGP 313,27
funds immediately available required from entrepreneurs			EGP 340,82
break even point at 51% of production			
envisaged production between 50 mn and 90 mn sq ft			

Table: 21 Outside infrastructures, fixed assets and equipment cost in percentage



Financial Plan

The financial plan outlined assumes a debt/equity ratio about 51,50: 48,50. In addition to the existing investment, the Medium and Large entrepreneurs and the Small Entrepreneurs will be required to subscribe about **EURO 56,67 million** to cover the cost of the rehabilitation and start up of the factory.

External funds will be needed to bridge the gap in addition finance. Some external sources (like IMC dev. Or Social Fund) will be expected to extend about Euro 45,6 million by way of a maximum 6% interest rate long term loan. Local Banks are expected to cover the working capital requirements, about Euro 1.300.000 overdraft through local finance (26% interest), while international cooperation institutions are to cover the some technical assistance needs for the amount of EURO 1.500.000, and the management, through the sale of the old equipment existing in Magra El Eion is to put up Euro 1.270.000.

Financial Indicators

Cash Flow

- The project shows positive cash flow during the 10 year of life, allowing a distribution of dividends in growth since the second year and an accumulation of undistributed profits that is able to sustain ulterior expansions of the initial investment and/or to **accelerate the restitution of the loans opened to the local and international financial system.**

Financial ratios

- Even if the Project results burdened by a local loan of the usual high interest rate, the debt Service Cover Ratio (ratio of cash generation to debt service) underlines a good capacity of repayment, considering that the values of such ratio oscillate in the years between numbers 3 and 10.

Return on equity and on Capital

- The nets profits performed by the project are positive since the first year and they arise between Euro 1,1 and 1,2 million per year.
- The rate of return on investment (ratio of annual net profit on invested capital) it is at 15% in the first year of full production, while the rate of return on equity will be at 25% during the ten years of the investment plan.
- In the 10 years of life of the project the Net Present Value (NPV) reaches EURO 420 million.
- The Internal rate of Return is 32,5%, above the rate of discount (15%) suitable for the project. Investment Payback

Investment payback

- The discounted cumulative net cash flow starts to have positive values between the 4th and the 5th years of life of the project.

Break Even Point

The BEP is reached at around 51% of the full production

Sensitivity analysis

Also The sensitivity analysis underlines **the strength of the project, since the variations of the sales prices and/or costs of the input material will negatively affect the IRR and NPV only above 10%**

The Integrated Tanning and Finishing Process

Processing Stages

Pre Tanning And Tanning

Hides storage

To preserve the material from putrefaction and damage by pests.

Soaking

The goods are soaked for a period of hours and days in water to wash off dirt and blood, and remove salt. Soaking is done in rotating wooden drums.

Liming and fleshing

The hides are then immersed in a mixture of water, lime and additional chemicals. This destroys or softens the epidermis of the hide, facilitating the removal of hair. Liming is done in rotating wooden drum. With liming is associated flashing and unhairing, that is the actual removal of flesh and hair from the skin. This is achieved by fleshing machine.

De-liming

The lime in the hides is now washed out, using water and ammonium sulphate. De-liming is done in rotating wooden drum.

Bating

Immersion of the hide in water with enzymes to produce soft and pliable leather. Bating is done in rotating wooden drum.

Pickling

Immersion of the skin in a weak acid solution. Pickling makes the skin slightly acid, a desirable condition at the start of tanning. Pickling process in rotating wooden drum.

Tanning

The skin is prepared for the actual tanning, that is the conversion of the collagen fibres into non putrescent leather. This is obtained by immersion in chrome powder by means of rotating tanning drum. The result is wet blue tanned leather, due to the characteristic blue colour obtained at the end of tanning.

Sammying and Draining

Sammying by means of a through feed sammying machine will reduce moisture to 70%. Draining consists in removing surplus of tan liquor from the wet blue by piling the pieces of leather on top of each other, and allowing them to drain.

Sorting and packing

Sorting of output (visual inspection), selected by grade. Packing is done on pallet, covered by plastic sacks.

Post-Tanning And Finishing Process

The considered working process is divided in two different stages:

- **Post-tanning**, to produce crust leather
- **Finishing**, to produce finished leather

Post-Tanning

The starting material at this stage of manufacture is the wet-blue leather as per the following figure (see next table).

The variety and difference in post-tanning wet work formulation followed by the tanners (even when producing very similar type of leather) is much broader than in beamhouse and chrome tanning. Nevertheless, while the chemicals used, float length, duration, temperature, and sequence differ, several steps of converting wet blue (both cattle hides and skins) into crust leather can be considered typical and considered a model of production for the present projected tannery.

Sammying and setting.

A machine with rollers is used to remove moisture. Setting out is the application of stroking pressure from one end of a piece toward the other, to flatten out the creases which might otherwise carry over into the finished leather.

Splitting

Hides are thicker on the back of the animal than its belly. Hence the practice of splitting a separate layer (split) of leather from the back portion of the main piece, on the flesh side. The split is a by-product of grain leather, and it lacks a grain side and it is

used for shoes, when it is thick enough, or for suede leather. The operation must be done through a splitting machine.

Shaving

Shaving gives to the leather a uniform thickness. A shaving machine with knives roller is used for this operation

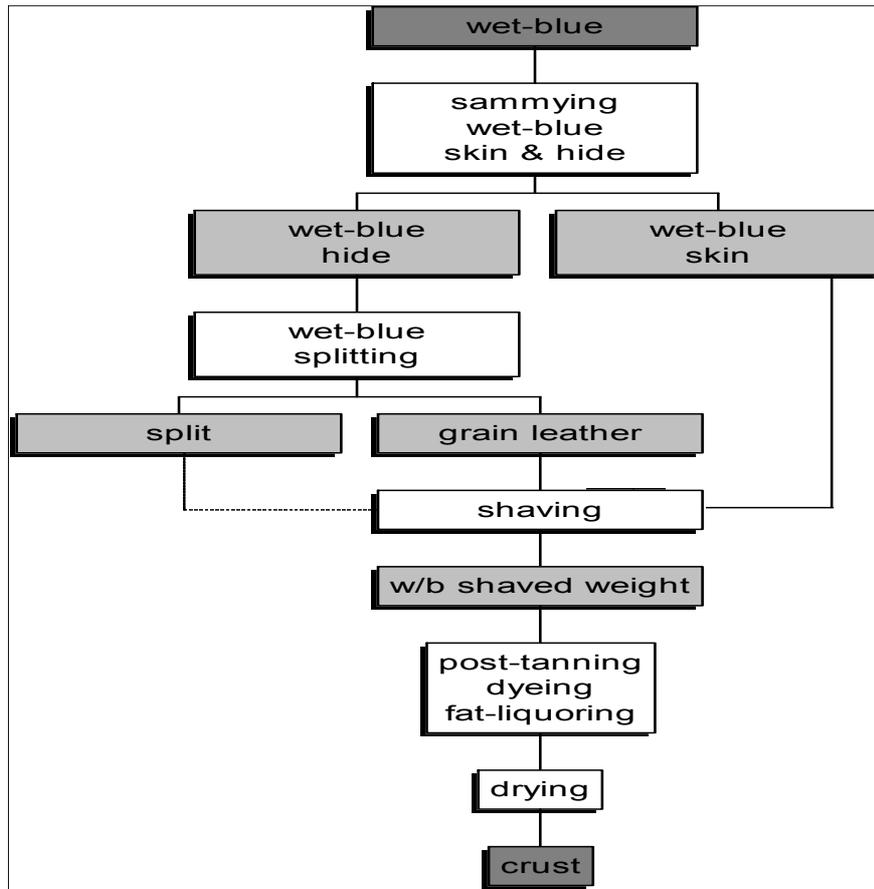
Post-tanning, Dyeing and fat-liquoring

These steps constitute a combination stage, performing in a rotating wooden drum. It gives to the leather the desired colour and degrees of firmness or suppleness. The result is crust.

Drying

Further moisture must be taken out of the leather. This may be achieved either by hanging it over rails for some ours, or through vacuum drier, or through toggling drier, or others, according to the products that are in use and the finished type of leather.

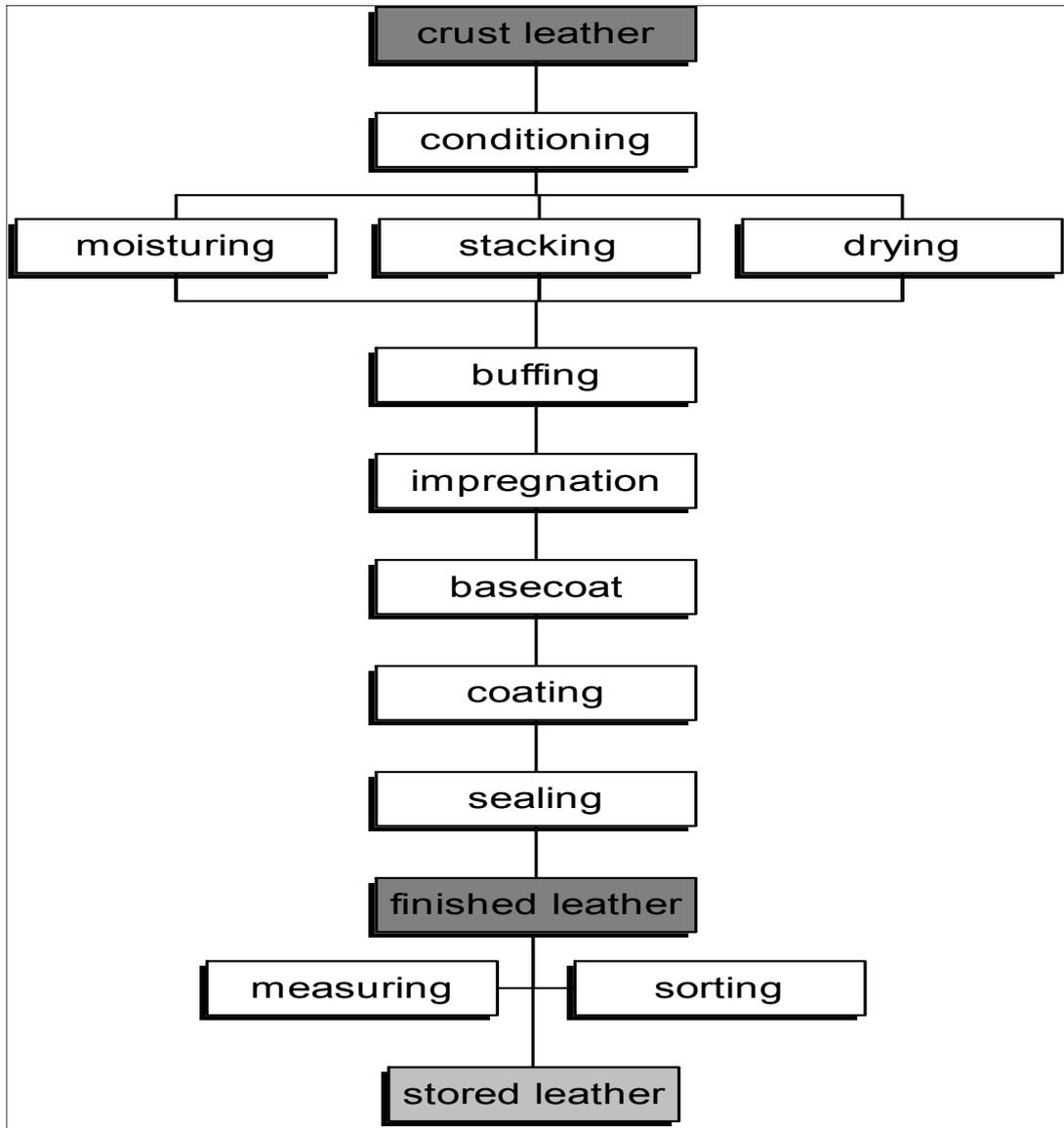
Table: 22 Crust



Finishing

It is hardly possible to find two tanneries following exactly the same finishing procedure, and in particularly the same finishing formulation even when they use the same raw material with the aim of producing the same kind of finished leather. Moreover, there are considerable differences in finishing of grain leather and split, sheep skin leather and goat skin leather, and to finish whole cattle hides or skins in general. However typical operation in a finishing department are shown in the next table.

Table: 23 Finishing



Conditioning

Some operations are between crust and finishing processing. Some conditioning is necessary to equalize the moisture, simply piling the leather flat on top of each other. Then some re-drying. Then the staking to soften the leather. The working action may be performed by a variety of machines, like vibration stacking machines or blade roller stacking machine, according to the type of input leather and the type of finished leather to achieve.

Buffing

This operation, performed by buffing machine, is the grinding of the grain surface with an abrasive to remove blemishes.

Impregnation

Basecoat

Coating

Various finishes are then applied padding and/or coating and/or spraying, in different sequences, according to the product that must be obtained. After each finishing operation, the leather must be dried through the conveyer tunnel dryers.

Sealing

The final sealing of the finishing is achieved by means of a combination of heat and application of pressure through plating and ironing machines. Plating is also needed when a grain surface must be simulated, different from the original one, or to be reconstructed on a deep buffed surface that spoiled the grain.

Measuring

The leather is sold by area, measured through an electronic measuring machine.

Sorting

Visual inspection of the leather, which is selected by grade and type.

Storage

The finished leather pieces are then stored in above ground racks in a separate store.

Service Stages

The production process has to be supported, between stages, by various services, which are briefly described below:

- **CHEMICAL STORE**, for post-tanning and finishing
- **LABORATORY TEST**
- **WATER SUPPLY**, by means of bore well
- **Heat**, by water boiler for post-tanning and finishing drying
- **ELECTRICITY**, connected to the national supply service, and, due to the temporary cut off of electricity, it will be necessary also to draw the power from a diesel electric generator
- **MAINTENANCE**, with appropriate tools and a stock of spare parts
- **ETP (EFFLUENT TREATMENT PLANT).**

Quality Control And Market Requirements

Quality control of finished leather is very delicate and depends from several “services”, connected with the constant control of chemical compounds, water stability during the process, from the point of view of the water softness or hardness, or the heating temperature.

According to the international standard, the goods offered for export will be prepared by means of a pre-production laboratory test, and all the production referred to a selected sample perform the same visual and technical characteristics of quality.

For this reason, special care must be put on the training of the technicians in charge to prepare the samples, the operators of the chemical laboratory and the supervisors of the various stages of production.

The personnel will be trained to base all selection procedures according to the specifications of quality standard, that are required by the international market, and that have been also specifically designed in order to grade the Egyptian leather.

The general specifications of the leather produced by local tanneries are:

1 Wet Blue (W/B hides)

Surface Area: more than 11 square feet

Thickness: 2.5-4.00 mm

Chromium Oxide: 3.0-4.0%

Moisture: 14.0%

Inspection Quality Grading: 50% grade A, 50% grade B or 30% grade A, 35% grade B, 35% grade C.

2 Pickled & W/B (Sheep)

Standard Size Grade: 50% large; 80-90 square feet per dozen; 50% medium: 65-80 square feet per dozen

Inspection Quality Grading: B 20%; C 40%; D 40% Small: 40-60 square feet per dozen

3 Pickled & W/B (Goat)

Standard Size Grade: 30% large: c5 square feet per piece; 70% Medium 3.0-5.0 square feet per piece

Inspection Quality Grading: 20% grade B; 40% grade C; 40% grade D; Small: less than 3.0 square fee per piece

Inspection Quality Grading: 20% grade B; 40% grade C; 40% grade D

Project Cost

In nominal terms, the estimated cost of the plant, including the stock of input material necessary to start up the production in the first year, is to the tune of **EURO 96,67 million**. The total value of the fixed assets is put at **EURO 35 million** and the preliminary costs for the relocation is put at **EURO 5 million** in local currency.

Additional investments are estimated EURO 50,667 million.

Fixed Assets' Investment

Site Preparation

Transfer costs and Site preparation EURO 5.000.000

Building

The building structures of the tannery units are the guidelines of modern and efficient operative solution foreseen for the industrial activities of the district. The single private units are part of a common whole design and construction standard. Also in order to reach this goal, some financial support from GOE are foreseen.

Purchase of the tannery, including building shell (Euro 18,3 million), internal finishing and landfill shares (Euro 6,7 plus 10 million) EURO 35.000.000. The envisaged area is about m² 85.000 for the hypothesis of 90 mn/ft² yearly production, and m² 45.000 for 50 mn/ft² yearly production.

Service Facilities

Auxiliary equipment

The figure is the result of 25% of (EURO 40 million) the total cost of the factories, necessary to rebuild the services and facilities, equal to EURO 10 million, plus balances, forklifts, pumps, conveyers, racks and carts for EURO 2.987.950 and 5% contingencies: total amount EURO 1.363.735

Water supply assembly

Current cost of connecting to the main ETP and installation, 5% contingencies EURO 616.000

Gas Supplies or Fuel tanks

Nat. gas connection or under ground concrete tank for diesel oil (1.000.000 litres) and gas or diesel valves assembly, including contingencies 5%, in case of gas or equivalent fuel Euro 157.500

Power supply system

Unit sub station transformer, primary and secondary feeders and cables, UPS (un interrupted power supply) module, earthing system, fitting and wiring for all lighting equipment process device, sub distribution board, control panel, energy meter, stand by generator, all including 5% contingencies EURO 1.762.170

Fire fighting system

This will include smoke detectors, fire alarms sounders, ordinary hazard automatic sprinkler system, allowance for extinguisher in office area and hose and reels in manufacturing and warehousing locations. Smoke detectors will be installed in the finished leather and chemicals stores, contingencies 5%, EURO 292.100

Sanitation equipment

This item encompasses the cost and installation of showers, toilets, sinks, urinals, fountains, dressing rooms with lockers, etc., plus 5% contingencies, EURO 84.000

Laboratory equipment

Chemical Lab equipments complete of all accessories, included with 5% contingencies EURO 156.100

Clinic equipment

Total cost of clinics equipment with 5% contingencies Euro 31.230

Workshop

The list includes reblading machine, drilling and milling machines, welding equipment, assorted tools, contingencies 5% EURO 183.000

Office furniture

General managers and deputy general managers offices, administration offices, staff offices, other ordinary furniture set, contingencies 5% EURO 119.700

Office equipment

Fax and telephones, typewriters and PC sets, printers, safe, air conditioners, air coolers, fans, refrigerators, water coolers, others and contingencies 5%, EURO 267.200

Transport Equipment

30 saloon cars, 10 truck, n° 10 pieces pick up, n°10 pieces mini bus and n°10 pieces bus, in total N°70 vehicles, including contingencies(5%), Euro 1.869.000

Machinery And Equipment

Tanning machines and spare parts, assembling and transport, Euro 2.500.000

INFRASTRUCTURE

ETP: Effluent Treatment Plant

Connections to the CETP

Connection to primary treatment and biological treatment, sludge treatment, supervision and plant start up, some civil work 3.036.000 (about 33% of CETP cost)

Detailed Offer Of Tanning Machinery And Equipment, And ETP Devices

List Of Tanning Machines

Item	Title and main Features of machines - BRAND NEW	Unit.	Quantity	Total Price
		Price F.O.B. EURO		
1.	<u>SOAKING - LIMING WOODEN PADDLE</u>	35.660	10 set	356.600
	<u>Use capacity: 6.000 liters</u> <u>Installed power: 4 kW</u>			
2.	<u>SOAKING - LIMING WOODEN PADDLE</u>	38.510	60 sets	2.310.600
	<u>Use capacity: 10.000 liters</u> <u>Installed power: 7,5 kW</u>			
3.	<u>LIMING WOODEN DRUM</u>	64.180	30 sets	1.925.400
	<u>External dimensions: dia. 3.500 x 3.500 mm</u> <u>Installed power: 18 / 11 kW</u>			
4.	<u>CHROME TANNING WOODEN DRUM</u>	49.210	40 sets	1.968.400
	<u>External dimensions: dia. 3.000 x 3.000 mm</u> <u>Installed power: 22 / 14 kW</u>			
5.	<u>HYDRAULIC FLESHING MACHINE</u>	47.070	20 sets	941.400
	<u>Working width: 1.800 mm</u> <u>Installed power: kW</u>			
6.	<u>HYDRAULIC FLESHING MACHINE</u>	106.260	10 set	1.062.600
	<u>Working width: 2.700 mm</u> <u>Installed power: 56 kW</u>			

7.	<u>HYDRAULIC SPLITTING MACHINE</u>	134.780	10	set	1.347.800
	<u>Working width: 3.000 mm</u>				
	<u>Installed power: 24 kW</u>				
8.	<u>RETANNING - DYEING & FATLIQUORING) MACHINE</u>	96.270	30	sets	2.888.100
	<u>Basket dimensions: dia. 2000 x 1300 mm, with 3 sectors</u>				
	<u>Installed power: 12 kW</u>				
9.	<u>HYDRAULIC SHAVING MACHINE</u>	62.400	10	set	624.000
	<u>Working width: 1.500 mm</u>				
	<u>Installed power: 40 kW</u>				
1..	<u>HYDRAULIC ROTARY SAMMYING MACHINE</u>	52.770	10	set	527.700
	<u>Working width: 1.600 mm</u>				
	<u>Installed power: 13,5 kW</u>				
11.	<u>HYDRAULIC SAMMYING & SETTING OUT MACHINE</u>	44.930	10	set	449.300
	<u>Working width: 1.600 mm</u>				
	<u>Installed power: 13,5 kW</u>				
12.	<u>VACUUM DRYER</u>	110.540	10	set	1.105.400
	s)				
	<u>Table dimensions: 4.000 x 2.200 mm</u>				
	<u>Installed power: 28 kW</u>				
13.	<u>HYDRAULIC ROTARY STAKING MACHINE</u>	43.100	10	set	431.000
	<u>Working width: 1.600 mm</u>				
	<u>Installed power: 14 kW</u>				
14..	<u>HYDRAULIC VIBRATING STAKING MACHINE</u>	51.350	10	set	513.500
	<u>Working width: 1.600 mm</u>				
	<u>Installed power: 8,5 kW</u>				

15.	<u>HYDRAULIC THROUGH-FEED SAMMYING MACHINE</u>	89.100	10	set	891.000
	<u>Working width: 2.400 mm</u>				
	<u>Installed power: 15 kW</u>				
16	<u>HYDRAULIC IRONING & EMBOSSING PRESS</u>	117.700	10	set	1.177.000
	<u>Table dimensions: 1.370 x 1.000 mm</u>				
	<u>Installed power: 40 kW</u>				
17	<u>HYDR. THROUGH-FEED IRONING & EMBOSSING MACHINE</u>	171.200	10	set	1.712.000
	<u>Working width: 2.600 mm</u>				
	<u>Installed power: 28 kW</u>				
18	<u>HYDRAULIC THROUGH-FEED BUFFING MACHINE</u>	49.900	10	set	499.000
	<u>Working width: 1.900 mm</u>				
	<u>Installed power: 28 kW</u>				
19	<u>ROTARY SPRAY FINISHING LINE</u>	186.800	10	set	1.868.000
	<u>Working width: 3.000 mm</u>				
	<u>Installed power: 48,5 kW</u>				
2.	<u>BUFFING DUST SEPARATOR FILTER</u>	4.300	10	set	430.000
	<u>Suction capacity: 5.000 m3 / h</u>				
	<u>Installed power: 7,5 kW</u>				
21	<u>THROUGH-FEED ELECTRONIC MEASURING MACHINE</u>	31.400	1	set	314.000

Working width: 2.200 mm

Total amount of machines with
 spare parts (1) - F.O.B.
 Freight (2) to Cairo

Euro 22.955.800

Euro 459.000

<i>Marine Insurance (3)</i>	<i>Euro 115.000</i>
<i>C.I.F. value in Cairo</i>	<i>Euro 23.529.800</i>
<i>Erection and Test run prices (3) of supplied machines</i>	<i>Euro 900.000</i>
<u><i>Total amount of Supply Proposal</i></u>	<i>Euro 24.429.800</i>

Effluent Treatment Link

Brushed screens, blower, air distribution device, sludge scraping devices, submersible pumps, pipelines to terminals, electrical wiring

3.036.000. EURO

Other Assets

Other assets are the pre-production expenditures, the initial stock of raw material and the contingencies, calculated 5% on total fixed assets cost

Pre-Production Expenditures

The preliminary expenses of the projects are connected with initial technical assistance, installation and commissioning of the machines and new equipment, the training of the local staff to manage the new equipment, roughly estimated **EURO 3.000.000**, mainly for wages to be supported before the start up of the production.

Other costs are related to the research and development tasks, like follow up of the initial production process, salaries and wages of the project set up team, travel expenses of the project team, registration and licensing, local studies and consultancies, estimated **EURO 484.500 and EURO 300.000**, respectively for internal and external resources.

Contingencies

The contingencies have been defined up to **5%** on all fixed assets costs

Stock

The initial stock will cover raw hides and skins, as local supplies, and chemical and packing material as imported supplies, for one month of production, divided in 52% the cost of local raw material, and 48% the cost of imported input materials.

The total cost of the stock is estimated **EURO 2.580.000**

Labour Requirement And Cost

Labour requirement to plan and operate the tanneries will be about 1.000 persons, divided between 200 unskilled, 600 skilled workers, 150 clericals, 40 managers and the support of the TSC and other outsourcing services, involving about 1.010 PMUple . The total annual wage bill including 40% provision for fringe benefit and social costs, and will amount every year for

each employee **EURO 6.720, EURO 16.800, EURO 26.040, EURO 53.760, EURO 1.440.000**, respectively the unskilled workers, the skilled operators, the administration staff, the managers and the outsourcing and TSC activity's support.

Table: 24 Labour requirement

CATEGORY	NR. OF JOBS	MONTHLY WAGE	FRINGE BENEFIT AND SOCIAL COST	COST OF EACH EMPLOYEE PER ANNUM	TOTAL
TSC & outsourcing	(1.010)	100.000	20%	1.440.000	1.444.000
Manager	40	384	40%	5.376	215.040
Clerical	150	186	40%	2.604	390.600
Unskilled	200	48	40%	672	134.400
Skilled	600	120	40%	1.680	1008.000
Total labour	(990+1.010)				3.188.040

Financial analysis

Proposed Financial Plan

The financial plan outlined assumes a debt/equity ratio about 51,50: 48,50. In addition to the existing investment, the Medium and Large entrepreneurs and the Small Entrepreneurs will be required to subscribe about **EURO 56,67 million** to cover the cost of the rehabilitation and start up of the factory.

External funds will be needed to bridge the gap in addition finance. Some external sources (like IMC dev. Or Social Fund) will be expected to extend about Euro 45,6 million by way of a maximum 6% interest rate long term loan. Local Banks are expected to cover the working capital requirements, about Euro 1.300.000 overdraft through local finance (26% interest), while international cooperation institutions are to cover the some technical assistance needs for the amount of EURO 1.500.000, and the management, through the sale of the old equipment existing in Magra El Eion is to put up Euro 1.270.000.

Basic Assumption

- The economic life of the project is 10 years plus about 6 months construction, installation, start-up and commissioning period.
- The production plan is based on to 8-hour shifts per day for 300 working days per year,.
- In this analysis the processing of sheep and goat skins, and cattle hides is assumed. The plants, however, can process skins and hides of camels and wild games.

- The designed initial production capacity of the plant is 30.000 skins of sheep and goats, and 6.000 hides of cattle per day.
- The processing of raw skins is as follows: 60% sheep skin and 40% goat skin;
- The average weights of skins and hides are :
 - Wet salted cattle hide 8/10 kg
 - Goat skin 1,5 kg
 - Sheep skin 2,0 kg.
- The proposed product mix is as follows:

Table: 25 Output: product mix

Product type	Sheep	Goat	Cattle
Pickles	0%	30%	0
Wet blue	50%	40%	30%
Crust	40%	20%	30%
Finished	10%	10%	40%

- Rejects are put at 5% for sheep and goat skins and 2% for cattle hides and are principally used as inner lining for shoes.
- Outputs by grade of sheep and goat leather are :

Table: 26 Leather grading

Grade	Sheep		Goat	
	Area ft ²	%	Area ft ²	%
Large	< 5,5	40%	< 5	40%
Medium	5 - 5,5	40%	3,5 - 5	40%
Small	> 5	20%	> 3,5	20%

- The conversion rates from raw skins and hides to finished leather are: on average, 6 ft² for sheep skin, 4 ft² for goat skin; and 30 ft² for cow hide.
The analysis is based on.: 5 ft² for sheep and goat skins and 27.5 ft² for cattle hide.
- The sales programme will be as follows:
- **Semi-finished sheep and goat skins are packed and sold in dozens, large and medium are packed together while small sized skins are packed separately.**

- Selling prices are fixed on the basis of prevailing local market prices and FOB prices at Cairo respectively for domestic market and export market.
- It is assumed that as encouragement to investment the enterprises will be exempted from business profit tax for first 5 years of commercial production .Also, it will be exempted from export tax.
- Rejects are sold locally at 50% the price of finished products
- The enterprises will face no restrictions on the use of :proceeds from its export sales
- The financial analysis is based on constant prices.

Project Financial Statements

Project Income Statements

Annual Operating Costs

The production input requires two 8 hours shifts per day for 300 working days per year.

Raw Materials

Raw Hides And Skins

The production programme is based on a daily intake of 30.000 skins of which 60% will be sheep skins and 40% will be goat skins, and a daily processing capacity of 6.000 cattle hides.

The resultant annual purchases and costs of raw hides and skins will be to the tune of **EURO 18,1** million

Packaging

Packaging is to be effected on products to be exported . the packaging materials are polythene bags for inner lining packaging and plastic bags or sacks for outer packaging.

They are calculated in sets (polythene + plastic bag), but distributed in pieces, and the quantity of pieces needed for the related bundles of skin or hide leathers has divided into square feet and dozens.

Chemicals

Various chemicals are used in the different stages of the leather production process. The tanning process selected is mineral tanning with chrome.

The Chrome tanning, colouring and fat liquoring complex, and the finishing chemical products enclosed in the following list have been calculated for the total process requirement.

The cost of the chemical compound obtained, **EURO 840/Ton**, has been divided between the single units of output products input for main tanning process -

Table: 27 Chemicals

	Chemical	Qty (Tons)
1	Sodium sulphide	127
2	Hydrated lime	164
3	Wetting agent	18
4	Cleaning agent	18
5	Ammonium sulphate	45
6	Sodium meta-bisulphide	18
7	Battin agent	9
8	Salt (sodium chloride)	454
9	Formic acid	18
10	Sulphuric acid	36
11	Preservative	15
12	Chrome salt	273
13	Sodium bicarbonate	36
14	Tangan pak-n	27
15	Tangan 3ln	9
16	Tangan os	27
17	Retingan r7	18
18	Mimosa extract	26
19	Novitan map	18
20	Doltan fl	9
21	Dye stuff asc	4
22	Pigment black	6
23	Pigment light brown	2
24	Pigment dark brown	4
25	Pigment yellow	2
26	Pigment red	2
27	Pigment bourdeaux	2
28	Pigment medium binder	11
29	Pigment isoderm base hf	4
30	Laquor dyes	0.6

Salaries And Wages

As presented in the chapter “Labour requirement and costs”, the total manpower required to plan and operate the tannery will be about 1.000 persons plus outsourcing and TSC services, equal to additional 1.010 jobs.

The total annual wage bill including provision for fringe benefits and social costs will amount to **EURO 3.188.000**

Utilities

In the following table is represented a list of utilities divided between the operating cost of the bore wells to supply the necessary water (about 372 tons per day), the direct generation of electricity (40% of the total requirement) and the cost of National supply of electricity (60% of total requirement), and the cost of fuel equal to **EURO 45.129.000** related to the electricity supply, and **EURO 1.380.000** the fuel for the vehicles.

Table: 28 Utilities

WATER		
ELECTRICITY	One year national supply 45.129.000 kwh	Euro 0,1 kwh
FUELS	Boiler 100 tons per year, or equivalent gas Nr 40 Management cars 100 ton per year Nr 40 transport vehicles 180 ton per year Lubricant 13% of fuel cost	Fuel (diesel) per ton Eur 100

Maintenance

Maintenance and repair has been calculated 1% on all fixed assets, equal to **EURO 618.000**

Insurance

The insurance will cover all fixed assets with the cost of 1%, equal to **EURO 618.000**

General Administration

- A list of **training and administration costs** has been detailed in the following table, for a total amount of **EURO 1.160.000**, plus 5% as administration overheads, equal to **EURO 58.000**.
- Factory overheads costs 1% of total output, **EURO 700.000**
- Marketing costs have been put on **EURO 350.000**, equivalent to 0,55 of total output, in order to pay the fees of the agents in the EU.
- The spare parts in the first year are included with the purchased equipment, but they will cost 5% on the machinery cost starting from the second year of production: **EURO 1.250.000**

Table: 29 Administration cost

TRAINING AND ADMINISTRATION	Euro 21.900	Euro 1.160.000
Vehicle operating cost	4.830	
Batteries	25.000	
Professional fees	16.500	
Board of directors	27.500	
Legal	5.500	
Bank	56.000	
Uniforms	500.000	
Training	20.000	
Software	100.000	
Lab and clinic material	150.000	
Office supplies	180.000	
Communication (tel, fax etc...)	15.500 35.000	
Subscriptions	2.270	
Entertainment Miscellaneous		
ADMINISTRATION	Overheads Euro 58.000	5% on training and administration cost
MARKETING	Foreign agent in EU for sales and follow up: about 0,5% on sales	Euro 350.000
FACTORY OVERHEADS	General expenses are calculated on turnover	2% (Euro 700.000)
SPARE PARTS	Spare parts are included for the year (Euro 1.250.000)	5% on machinery cost after the second year

Selling Expenses

Distribution expenses for transporting exports to Cairo are for about 960 20ft containers at **EURO 1.300 each**.

Depreciation And Amortisation Rates

Building	10%
Service facilities	10%
Transport equipment	20%
Plant machinery and equipment	20%
Infrastructure	10%
Preproduction expenditures	20%

Financial Charges

The tentative financial plan assumes that **EURO 45.660.000** will be raised by way of foreign finance under the following terms and conditions:

- interest rate 6%
- 10 years of restitution
- 2 year grace on capital and interest
- reception the total loan in the first year

The bank overdraft of **EURO 1.300.000** will be covered with 26% of interest.

The working capital expenses are depicted in the following table

Table: 30 Working capital

CASH IN HANDS	TIME REQUIRED (DAYS) TO CONVERT THE CASH IN HAND	1
ACCOUNT RECEIVABLE	Period of payment from buyers (days)	30
RAW MATERIAL	Storage duration (days)	30
IN PROCESS	Expected duration of the products' processing (days)	20
FINISHED PRODUCTS	Expected duration of the finished products in storage (days)	10
SPARES	Expected duration of the spare parts in storage (days)	365
UTILITIES	Period of payment of stored utilities (days)	30
ACCOUNTS PAYABLE	Terms of payments to suppliers (days)	30

Profit Tax

The enterprises in the district will be exempted from business profit tax for the first 5 years of production.

Dividends

The enterprises are expected to declare and pay dividends to its shareholders at rates commensurate with its profit level. It has been suggested not to distribute dividends in the first year and to distribute 50% of dividends in the second year.

Revenues

Quantity Produced

The production plan is based on processing 30.000 skins and 6.000 hides per day, or 9.000.000 skins and 1.800.000 hides per year.

Skins are divided in 60% sheep skins and 40% goat skins and are graded into 80% large and medium and 20% small.

The envisaged product mix and needs of input materials are as per the basic assumptions and are presented in the table below:

Table: 31 Input material

Raw material	Supply	Unit	Price Euro	Related finished product	Unit of finished product	Convert. calculation	Consumpt. per unit
Sheep skin medium/large	local	piece	1,60	Export sheep skin	dozen	12 piece = 1 doz	12 piece
Sheep skin small	local	piece	1.45	Export sheep skin Local finished and reject	Dozen Ft ²	12 piece = 1 doz 1 piece = 5 ft ²	12 piece 0.20 piece
Goat skin medium large	local	piece	1,00	Export sheep skin	dozen	12 piece = 1 doz	12 piece
Goat skin small	local	piece	0,90	Export goat skin Local finished and reject	Dozen Ft ²	12 piece = 1 doz 1 piece = 5 ft ²	12 piece 0.20 piece
Cattle hide	local	piece	3,90	Export hide Local finished and reject	Ft ² Ft ²	1 piece = 27,50 ft ²	0,036 piece “ “
Packaging polythene/plastic bag/bundle	import	piece	1,39	All export goods	Sheep/goat doz Hide/skin ft ²	1 bag each 4 dozen 1 bag each 90 ft ²	0,25 0,01
Chemical	import	Kg	0,84	Ft ² hide/skin leather Dozen skin leather	Consumption per day 4,71 ton	Various chemicals to produce 600 hides and 3.000 (250 doz) skins per day, that is equivalent to about 31.500 ft ²	0,15 8,97

Quantity Sold

The sales programme is structured on the assumption that all semi finished hides and skins will be destined for the export market, while all finished products and rejects will be sold in the local market. This translates into 16,75% and 82,5% local and export for skins, and 40% and 60% local and export for hides respectively.

Semi finished skins are sold in dozen of large/medium and small. All finished hides and skins, as well as semi processed hides are sold per square feet.

Raw sheep and goat skins are converted into finished form at an average rate of 5 square feet per skin. The cow hides are converted into 27,5 square feet per piece.

The sales programme is as below:

Table: 32 Sales programme

ITEM	LOCAL MARKET			EXPORT MARKET						TOTAL SALES EURO000
				Medium & large			small			
	Quantity Ft ²	Unit Price	Total Euro000	Quantity doz	Unit Price	Total Euro000	Quantity doz	Unit Price	Total Euro000	
Sheepkin (average surface of finished per dozen ft ² 60)										
Wet blue				16.650	65	1.082	4.163	50	208	1.290
Crust				13.320	70	932	3.330	55	183	1.115
Finished	269.730	0,53	143							143
Rejects	218.700	0,27	59							59
Subtotal			202			2.014			391	2.607
Goatskin (average surface of finished per dozen ft ² 60)										
Pickles				6.660	25	167	1.665	18	30	197
Wet blue				8.880	30	266	2.220	23	51	317
Crust				4.440	35	155	1.110	28	31	186
Finished	141.525	0,53	75							75
Rejects	114.750	0,27	31							31
Subtotal			106			588			112	806
Cattle hides (average surface per piece 27,50 ft ²)				Quantity Ft ²	Unit Price	Total Euro000				
Wet blue				1.465.385	0.65	953			953	
Crust				1.465.385	1.00	1.465			1.465	
Finished	1.953.846	0.61	1.192						1.192	
Rejects	74.385	0.31	23						23	
Subtotal			1.215			2.418			3.633	
Grand total yearly sales									7.046	

Selling Prices

The sales policy is based on the prevailing market prices for finished skins and hides in the home market and FOB prices for semi finished products destined to the export market.

The current market prices are listed below:

Table: 33 Products and prices

ITEM	SHEEP		GOAT		CATTLE	
	Local market	Export market	Local market	Export market	Local market	Export market
Pickles						
Large/medium				Euro 25 doz		
Small				Euro 18 doz		
Wet blue						
Large/medium		Euro 65 doz		Euro 30 doz		Euro 0,65 ft ²
Small		Euro 50 doz		Euro 23 doz		
Crust						
Large medium		Euro 70 doz		Euro 35 doz		Euro 1,00 ft ²
Small		Euro 0,55 doz		Euro 28 doz		
Finished	Euro 0,53 ft ²		Euro 0,53 ft ²		Euro 0,61 ft ²	
Rejects	Euro 0,27 ft ²		Euro 0,27 ft ²		Euro 0,31 ft ²	

Annual Sales And Revenues

The annual output of processed leather is 9.000.000 skins and 1.800.000 hides. Given the above selling prices, the annual sales are as depicted herewith:

- Sheep skins
- Wet blue EURO 12.900.000
- Crust EURO 11.150.000
- Finished EURO 1430.000
- Rejects EURO 590.000
- Goat skins
- Pickles EURO 1.970.000
- Wet blue EURO 3.170.000
- Crust EURO 1.860.000
- Finished EURO 750.000
- Rejects EURO 310.000
- Caw hides
- Wet blue EURO 9.530.000
- Crust EURO 14.650.000
- Finished EURO 11.920.000
- Rejects EURO 230.000

- Total sales EURO 70.460.000

Project Financial Indicators

Cash Flow

- The project shows positive cash flow during the 10 year of life, allowing a distribution of dividends in growth since the second year and an accumulation of undistributed profits that is able to sustain ulterior expansions of the initial investment and/or to **accelerate the restitution of the loans opened to the local and international financial system.**

Financial ratios

- Even if the Project results burdened by a local loan of the usual high interest rate, the debt Service Cover Ratio (ratio of cash generation to debt service) underlines a good capacity of repayment, considering that the values of such ratio oscillate in the years between numbers 3 and 10.

Return on equity and on Capital

- The nets profits performed by the project are positive since the first year and they arise between EURO 1,1 and 1,2 million per year.
- The rate of return on investment (ratio of annual net profit on invested capital) it is at 15% in the first year of full production, while the rate of return on equity will be at 25% during the ten years of the investment plan.
- In the 10 years of life of the project the Net Present Value (NPV) reaches EURO 420 million.
- The Internal rate of Return is 32,5%, above the rate of discount (15%) suitable for the project. Investment Payback

Investment payback

- The discounted cumulative net cash flow starts to have positive values between the 4th and the 5th years of life of the project.

Break Even Point

The BEP is reached at around 51% of the full production

Sensitivity analysis

Also The sensitivity analysis underlines the strength of the project, since the variations of the sales prices and/or costs of the input material will negatively affect the IRR and NPV only above 10%

FINANCIAL CALCULATION RULES

The financial rules and algorithms describe the methods of calculating results and performance indicators. Some of the rules and algorithms pertain to schedules, or results, offered by the program. Schedule titles and numbers correspond to those of the industrial feasibility studies upon which they are based

The definitions of the program functions are supplementary to the more descriptive information on calculation rules contained in the discussions on schedules and graphs in chapter IX and on data input (chapters). For a complete understanding of some of the financial calculation rules and algorithms it may be necessary. In some cases, to refer to the other chapters containing information on the function.

Unless explicitly defined otherwise, as in the case of some loan disbursements and repayments, it is assumed in all calculations that transactions(flow of funds/resources) occur on the last day of the year in which defined.

A. GENERAL RULES

In general, financial data is converted to account units at current prices according to the following procedure:

1. All items are converted to local currency at the defined exchange currency to local currency, with the following exception:

Debt balance and debt service on

Loan expressed in foreign exchange are calculated in the input currency and then converted to local currency at the defined exchange rate.

$$P_{Lj} = p_{ij} \times ER_{L/I}$$

p_{Lj} Price in local currency **L**, year **j**

p_{ij} Price in input currency **I**, year **j**

$ER_{L/I}$ Exchange rate, units **L** per unit **I**

2. Calculation are performed in local currency with the exceptions indicated above.

3. All items are converted from local currency to accounting currency at the defined exchange rate of accounting currency to local currency.

$$P_{Aj} = P_{lj} \times ER_{A/L}$$

P_{Aj} Price in accounting currency **A**, year **j**

P_{lj} Price in local currency **L**, year **j**

$ER_{A/L}$ Exchange rate, units **A** per unit **L**

4. The value in step 3 is divided by the specified unit of the accounting currency

(see chapter VII.I, currencies)

B. CURRENCY EXCHANGE RATES

Converting data in currencies other than the accounting currency differs for analysis with and without inflation. In the conversions, three currencies are involved:

The currency in which the input data is expressed (**I**), the local currency (**C**) and the accounting currency (**A**).

Analysis without inflation

The exchange rates remain constant during the defined planning horizon.

The exchange conversion factor **FC** from **I** to **A** units without inflation is determined by:

$$FC = ER_{L/I} \times ER_{A/L}$$

$ER_{L/I}$ Exchange rate **L** to **I**

$ER_{A/L}$ Exchange rate **A** to **L**

A Accounting currency

I Input currency

L Local currency

$$P_A = P_L \times FC$$

P_A Price in accounting currency **A**

P_L Price in local currency **L**

Analysis with inflation

(not available in COMFAR /// MINI EXPERT)

The exchange rate in any year of the planning horizon varies according to the inflation rates of the two currencies involved.

A basic assumption of this model is that the long term devaluation (or revaluation) of a currency follows its inflation relative to the other currency.

The inflation rate percent (**R**) may be constant or variable. The inflation in each currency can be defined for each year in the planning horizon so that if Inflation is active, the exchange conversion factor can differ for each year.

C. DISCOUNTING

Future values are discounted to represent values. Discounting is effectuated at the rates defined in the data entry sections. Discounted amounts are calculated assuming 360 days per year and 30 days per month. Values are discounted to the reference date (the end of the first year).

The discounting factor $f(c/d)_m$ for any number of months **m** in the planning horizon with discount rate **dc**, %100, is given by:

$$f(c/d)_m = (1+dc)^{m/12}$$

dc Annual discounting , %100

m (current date- reference date) in months = (number of days)/30

$f(c/d)_m > 1$ when **m** is positive (reference date <date)

$f(c/d)_m = 1$ when **m** or **dc** = 0

$f(c/d)_m < 1$ when m is negative (compounding system)

The discounted amount for a number of m months is determined by:

$$A_m = \frac{A}{f(c/d)_m}$$

- A_m Discounted amount for m months
 A Amount in month m
 $f(c/d)_m$ Discount factor for m months
 m $m = 0, 1, 2, \dots$ months of discounting

D. NET PRESENT VALUE, INTERNAL RATE OF RETURN

Net present value (NPV)

The NPV is defined as the sum of the present (discounted) values of amount in a series of periods. It is a method of aggregating amounts occurring in different periods of time in a common measuring unit, present value.

The NPV is computed as follows:

$$NPV = \sum_{j=1}^n DCF_j$$

$$DCF_j = \frac{A_j}{F(c/d)_{j-1}}$$

- DCF_j Discounted cash flow, year j
 A_j Net of all positive and negative flows, year j
 n Number of years in the planning horizon including the year in which the salvage value of assets is recuperated.

Discounting to the end of the first project year means, that the first year amount are not discounted.

Internal Rate of Return (IRR)

The IRR is defined as the discounted rate at which the $NPV = 0$. It can be also defined as the rate at which the investment or equity (depending upon the basis for the computation) generates net benefits.

The IRR may not be unique. The number of IRR_s will be equal to the number of roots of the polynomial by which it is expressed, which result from changes in the periodic amounts from positive to negative (or reverse) . Another deficiency of IRR is that there is inherent assumption that all of the cash surpluses are reinvested at the IRR.

The IRR is the discount rate that satisfies the following equation:

$$NPV = \sum_{j=1}^n DCF_j = 0$$

A search routine seeks the discount rate (s) for which the NPV = 0

E. COMPOSITION OF CASH FLOWS

In the above calculations of NPV, IRR and MIRR, the rule for determining the value of the in year **j**, (**A_j**) differs according to the level of investment that is the basis for the calculation:

Total investment

Total equity

Shareholder class (for joint venture projects)

The rules are defined in the most general form.

Cash Flow Related To Total Capital Invested

$$CF_{TC} = - (FA_{SB} + CA_{SB} - CL_{SB}) + \sum_{j=1}^n NCF(TI)_j + RV_{n+1}$$

FA_{SB} Total of fixed assets from starting balance (applicable only for day preceding start of construction phase)

CA_{SB} Total of current assets from starting balance (applicable only for day preceding start of construction phase)

CL_{SB} Total of current liabilities from starting balance (applicable only for day preceding start of construction phase)

NCF (TI) Net cash flow on total investment, year j (from discounted cash flow – total capital investment schedule)

RV_{n+1} Residual value in year after end of production phase (net of fixed assets and working capital)

NCF (TI) is derived from the cash flow for financial planning schedule by eliminating all financial transaction in each year j (equity. Loan disbursements and repayments, interest, dividends)

Cash Flow Related To Total Equity Invested

$$CF_{TE} = -E_{SBI} + \sum_{j=1}^n NCR(TE) + RV_{n+1}$$

E_{SBI} Starting balance equity, shareholder classes i*

NCR (TE) Net cash return on total equity, year j (from discounted cash flow – total equity capital invested schedule)

RV_{n+1} Residual value in year after end of production phase (net of fixed assets, working capital and payment of outstanding debt)

NCR (TE) is derived directly from the cash flow for financial planning schedule by expunging the total equity contribution and dividends paid in each year in each year in which such items appear (in effect, subtraction out the equity and adding back the dividends).

CASH FLOW OF SHAREHOLDER CLASS (JOINT VENTURE PARTNERS)

$$CF_{SEI} = -ESB_j + \sum_{j=1} [-ED_{ij} + ER_{ij} + PD_{ij} + OD_{ij}]$$

ESB_j Starting balance equity, shareholder class i*

ED_{ij} Equity paid-in (disbursement), class i year j

ER_{ij} Equity reimbursement, class i year j

PD_{ij} Preferred dividends, class i year j

OD_{ij} Ordinary dividends, class i year j

ESB_j is effective (as part of the defined starting balance) on the day prior to the start of the project.

The model does not include any distribution of residual funds or profit to simulate the benefits accruing to partners from reinvestment, nor are the residual value of assets and liabilities distributed among the shareholders classes. The return to the shareholders class which includes the benefits of reinvestment of residual funds (after payment of dividends) or profit can be simulated by reducing the retained profit on the PROFIT DISTRIBUTION window to zero and adjusting the distribution to ordinary shares to reflect the total of distributed and distributed profits to each shareholder class. However, it is not possible to directly distribute the residual value of assets in the year (n + 1) except by liquidating all assets and liabilities during the production phase.

F. DEPRECIATION

In all methods the value of the assets depreciated is determined as the value defined in each year converted to local currency at the defined rate of exchange between the currency in which the asset is denominated and the local currency. Four methods are included the model:

Linear to Zero

Linear to scrap

Accelerated (declining balance)

Sum of years digits

These methods are described in chapter VII.N.

LINEAR TO ZERO

$$SV = IBV \times \frac{SVR}{100} - \frac{(IBV - SV) \times L}{IBV}$$

M= Integral part of

$$D_j = \frac{IBV}{L}$$

$$RBV_1 = IBV - D_1$$

$$RBV_j = RBV_{j-1} - D_j$$

$$D_{M+1} = RBV_M - SV$$

D_j **Depreciation in year j**

IBV **Initial book value**

L **Length of depreciation in years**

SVR **Salvage value rate (percent of initial book value)**

SV **Salvage value**

RBV_j **Remaining book value at end of year j**

j **j = 1,2,...,M years**

-

LINEAR TO SCRAP

$$SV = IBV \times \frac{SVR}{100}$$

$$D = \frac{IBV - SV}{L}$$

$$RBV_0 = IBV$$

9. ACTION PLAN

Key Points Relating To Implementation

1. Implement new project co-ordination and management structure, with emphasis on engaging with the tanneries as beneficiaries.
2. Signed MoU's required between parties involved in project implementation to agree the key principles of project structure, funding, responsibilities and the implementation timetable.
3. Complete the Financial Assessment And Project Funding Study contracted through ASSOMAC.
4. Complete survey of businesses in the Magra El-Eion area.
5. Determine the financial structure and parameters of the project, including approach to realising the value of redeveloping the Magra El-Eion site.
6. Set preliminary project implementation action plan.
7. Submit requests for support and funding to key parties.
8. Deliver business development activities to area stakeholders, starting with the tanneries.
9. Secure funding package and revise action plan.

Progress And Issues With Key Points

1. Implement new project co-ordination and management structure, with emphasis on engaging with the tanneries as beneficiaries.
 - CLT will engage with area stakeholders from early in January 2006, with the plan to organise a workshop by the 4th week in January. The purpose of the workshop will be to brief the tanneries on the current status of the project, the proposals for project implementation; and to form the Business Taskforce.
 - Public statements that the tanneries will have to move from Magra El-Eion and compulsory evictions will be used if necessary to force them to relocate.
 - PMU / PMU will open an office by mid January 2006, with Business Engagement office to be opened in Magra El-Eion by mid February 2006.

- MFTI to take lead in inviting parties to attend first meeting of the Project Co-ordination Committee to be held before end January 2006.
 - MFTI will orchestrate the setting-up of the Project Management Sub-committee, with membership limited to: MFTI; IMC (Development); IMC (Technical) as the fund holders; General Industrial Development Authority (GIDA), also being referred to as the Industrial Development Agency; representatives from the area stakeholders.
 - In meantime JTT will continue to operate and PMU will be formed.
 - PMU only to start when Project Co-ordination Committee becomes operational.
 - Italian Co-operation initial commitment to provide EGP 1 mn funding for PMU / PMU, can be extended based on progress.
 - Submit preliminary action plan to the first meeting of the Project Co-ordination Committee, with understanding that it will be revised based on the completed study.
2. Signed MoU's between parties involved in project implementation to agree the key principles of project structure, funding, responsibilities and the implementation timetable.
- The PMU has already prepared a paper titled "Summary Statement Of Project Implementation" which indicates the key issues relating to project implementation and where decisions are required to be made by the Project Co-ordination Committee. This paper will form the basis of an agenda for the first meeting of the Project Co-ordination Committee, supported by a powerpoint presentation, or the submission of individual papers from the PMU, with the recommended course of action. Points that are resolved before the first meeting will be presented as information points.
 - The preparation of MoUs will be in two stages.
 - The first, preliminary, stage will relate to the outcome of the first meeting of the Project Co-ordination Committee, when the participating organisations will each be asked to specify their, in principle, commitments to supporting inputs into the preparation of the Financial Assessment and Project Funding Study, see point 3.
 - The second, final, stage will follow the submission of the Financial Assessment And Project Funding report which will indicate the contributions from, and commitments to, project implementation by each participating organisation.
 - The membership of the Project Co-ordination Committee will be changed alongside signing the final MoUs if some members fail to make contributions or commitments, or if new organisations are included in the final package of project assistance.

3. Complete the Financial Assessment And Project Funding Study contracted through ASSOMAC.

- This is currently contracted using Italian Co-operation funds through ASSOMAC, with the Project Co-ordinator and Business Development Manager positions in the PMU / PMU leading the study. Support is being provided by IMC (Technical) and ASSOMAC.
- The study is projected to be completed by the end of March 2006, but may extend into April, with the latest completion date being the end of April 2006.
- Key outputs from the study will be:
 - Projections on the availability of raw hides and skins for the Robikki tanneries cluster and the implications of the results for the level of production capacity to be installed at the cluster in a single phase to accommodate all of the tanneries that want to relocate from Magra El-Eion.
 - Financial modeling of: the total cost of implementing the tanneries cluster at the Robikki Leather Industrial Park; the funding of these costs based on different options to obtain the best result; and the projected financial performance of the new tanneries taking into account their one-of relocation costs, changes to their operating costs and how they will meet their share of the project's capital costs. The model will use three sizes of new tannery units.
 - Clear indication of the projected level of trading performance of the three sizes of new tanneries to indicate the level of net profitability that can be expected to be achieved by their owners.
 - Implications for the structure of the overall project implementation funding package if the results of the profitability assessment are too low, or if the associated risks are too high.

4. Complete survey of Magra El-Eion area.

- Based on funding provided through Italian Co-operation / IMC (Technical) a mapping exercise has been undertaken to identify: all of the businesses in the Magra El-Eion area; the categorisation of each business; the land area associated with each business; and its floor space.
- A database of 100 tannery businesses was prepared on behalf of the Chamber of Leather Tanning as part of the Action Plan study undertaken through a contract issued by IMC (Development). In addition preliminary survey activity of 30 tanneries has been undertaken through the Technical Assistance Component of IMC (Development).
- All of these data collection exercises need to be co-ordinated through the PMU / PMU to avoid duplication of activity.

- Additional survey activity will be required to ensure all of the required data is held initially on all of the tannery businesses, and later on all categories of business located in the Magra El-Eion area. Key information to be collected on each business:
 - Is it trading as a registered, or unregistered, business?
 - Does the business claim to own the land which is occupied by the business? If it does what evidence exists to support the claim.
 - Is it currently operational, or stopped operating? If it is in the “stopped operating” category when did it stop operating.
 - If the business is a tannery, does it have a beam house. If it has a beam house: how many drums; their dimensions; and their daily processing capacity. Also the quantity of output of the three stages of tanned leather production, during each of the last three years.
 - If it is involved in the production of tanned leather what is the relationship between the business and other businesses within the Magra El-Eion area? Do these relationships operate formally (no alternative is used, or casually with similar relationships with other businesses).
 - Number of current employees and split between permanent and casual.
 - Number of permanent and casual employees that live in Magra El-Eion area.
5. Determine the financial structure and parameters of the project, including approach to realising the value of redeveloping the Magra El-Eion site.
- The starting-point is to develop a detailed understanding of the total capital costs associated with establishing the tanneries element of the Robikki Leather Industrial Park, see point 3. This will require firming-up on the cost estimates prepared by IMC (Technical) and will require co-ordinated input from: ASSOMAC; IMC (Technical); Ministry of Housing and New Communities; Badr City Council; the Tanneries Technical Expert within the PMU / PMU; and others as required.
 - The outcome of the Financial Assessment and Project Funding Study indicating the minimum level of funding that needs to be made available through the project to redevelop the vacated Magra El-Eion site..
 - The potential of the redevelopment of the Magra El-Eion site to generate the required minimum, having a realistic target of the actual level of funding for the supporting the establishment of the tanneries cluster as part of the Robikki Leather Industrial Park. and the options for progressing the redevelopment project. Obtaining these results will require the redevelopment project to be studied. As this area of activity is not covered by the Financial Assessment and Project Funding Study it will be

funded through the Financial Schemes Component of IMC (Development).

6. Set preliminary project implementation action plan.
 - Discard all of the plans and timetables that have been prepared up to now.
 - A new preliminary plan is included within this Working Paper that will be submitted to the first meeting of the Project Co-ordinating Committee.

7. Submit requests for support and funding to key parties.
 - Preliminary request being prepared for IMC (Development) as an example.
 - Similar requests submitted to other parties to be represented on the Project Co-ordination Committee in advance of its first meeting.
 - During the first meeting each party will be asked to give a verbal, followed by a written response, on their reaction to, and ability to support, the preliminary requests. At this stage the requests will be “in principle” pending the results of the Financial Assessment and Project Funding Study.
 - Amnesty announced for unregistered businesses for a period of up to three years as long as during a year from now they have registered themselves with CLT.

8. Deliver business development activities to area stakeholders, starting with the tanneries.
 - IMC (Development) responds to preliminary request revise and implement the Tanneries Business Development Programme (TBDP).
 - It should be noted that the TBDP is a different type of delivery to the approach of gap analysis and closure, that has been adopted by IMC (Development), as the new tanneries at Robikki will be new businesses, rather than being up-graded existing businesses.
 - Extend the Business Development Programme (BDP) to cover other business activities that are eligible to be supported by IMC (Development).
 - Identify alternative sources of funding to implement the BDP within the business categories that are not eligible to be supported through IMC (Development)>
 - Co-ordinate the delivery of other business technical assistance activities with the delivery of the TBDP, such as: Leather Technology Centre; EcoTan project; FISE; Amreya Leather Training Centre.

9. Secure funding package and revise action plan.

- Identify alternative source(s) of funding that will allow the construction of the infrastructure works at the Robikki Leather Industrial Park to continue as contracted with Arab Contractors.
- The aggregation of all of the final MoUs will constitute the funding package for implementing both the Tanneries Cluster at the Robikki Leather Industrial Park and the relocation of the tanneries from Magra El-Eion. It needs to be recognised that there are more non-tannery, than tannery, businesses within Magra El-Eion and the non-tannery businesses must be taken into account when putting the package together.

9.1 Action Plans

Two action plans are presented:

- Preliminary Action Plan For Project Management.
- Preliminary Action Plan For Overall Project Implementation.

Both are referred to as being “preliminary” as each may be changed based on the outcome of their respective studies:

- Financial Assessment And Project Funding Study.
- Study of redevelopment of Magra El-Eion and generation of funding requirement of new Tanneries Cluster

Preliminary Action Plan For Project Management

Table: 34 Preliminary action plan for project management

Actions	Week Starting During 2006																						Comments	
	January					February				March				April				May				June		
	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	30	7	14	21	28		4
1. New Project Co-ordination And Management Structure																								
• JJT operational																								Only until Project Co-ordinating Committee becomes operational
• Public statements that tanneries must move																								Need to be made before first PCC meeting
• CLT starts engaging with area stakeholders																								Based on engagement plan, based the application of the "carrot and stick" approach
• PMU opens office																								
• MFTI invites organisations to attend first Project Co-ordinating Committee meeting (PCC)																								Project Co-ordinating Committee to be opened under the auspices of MFTI.
• Submit preliminary action plan to PCC																								This document
• First meeting of PCC																								
• First meeting of Project Management Sub-Committee (PMS-C)																								Membership of PMS-C should be agreed by the PCC.
• Open business engagement office in Magra El-Eion																								To be within a facility that is capable of accommodating wider activities
• MFTI organises membership of Project Management Sub-Committee (PMS-c)																								Managee the situation to ensure membership is restricted to representatives from key organisations
• PCC Meetings																								Quarterly
• Circulate agenda and papers to be considered																								Co-ordinated by PMU / PMU
• PMS-C Meetings																								Monthly
• Circulate agenda and papers to be considered																								Co-ordinated by PMU / PMU
Actions																								
Actions	Week Starting During 2006																						Comments	
	January					February				March				April				May				June		
1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	
2. Signed MoUs Between Parties																								
• IMC responds to																								Response to encourage other

Preliminary Action Plan For Overall Project Implementation

Table: 35 Preliminary action plan for overall project implementation

Main Area Of Activity	2006				2007				2008				2009				Comments	
	Q1	Q2	Q3	Q4														
PMU operational in Cairo																		
PMU operational at Robikki																		
Complete Financial Assessment And Project Funding Study																		Based on outputs agreed by PCC and PMC-C
Changes to Robikki infrastructure (if required)																		Package of infrastructure must meet the business development requirements of the Tanneries Cluster, with ability to be expanded to operate for whole Leather Cluster. Including leather products
Study to determine structure, approach for realising value from redevelopment of Magra El-Eion																		Basis of PPP and how this is to be linked to the Robikki Leather Industrial Park
Outcome of two studies presented to area stakeholders to ensure they understand all aspects of the overall project and how the new Tanneries Cluster will be established and operate																		Presentations must conclude with positive reaction of the area stakeholders and agreement between them and the PCC on how to proceed. This should coincide with PCC meeting at end of April
PCC agrees best use of Italian funding to make project implementation work successfully																		Based on flexibilities to be indicated by Italian Co-operation
Undertake infrastructure construction work																		At start identify any implications for contracts already signed and rectify
Specification of Magra El-Eion redevelopment project																		Specification required to be certain about its ability to generate the funding to be injected into the Tanneries Cluster at the Robikki Leather Industrial Park
Determine overall implementation mechanism for new Tanneries Cluster at Robikki Leather Industrial Park, including PPP relationships																		This will be based on the PMU, but will have to incorporate the principles of progressing the project as a PPP, and its links into the redevelopment project for Magra El-Eion
Secure funding package for implementing all aspects of the new Tanneries Cluster at Robikki Leather Industrial Park, including funding of each tannery business																		Including commitments from all parties represented on the PCC.
Business plan each new tannery																		Under delivery of TBDP

Main Area Of Activity	2006				2007				2008				2009				Comments
	Q1	Q2	Q3	Q4													
Set-up implementation mechanism for Magra El-Eion redevelopment project																	Based on outcome of study of Magra El-Eion redevelopment project, using PPP principles
Secure preliminary funding package for implementing Magra El-Eion Redevelopment Project																	The structure will be confidential and the PCC does not need to know the details, except that it is fundable, to generate the injection of finance into the new Tanneries Cluster
Tanneries determine the design of each of their new sites and buildings at the New Tanneries Cluster, based on the outcome of their business plans for their individual new tanneries																	Tanneries have the right to determine their own designs and contracting procedures
Construction specifications prepared for the new tanneries and contracting procedures formalised.																	Under the control of the tanneries with professional support
Construction of tanneries at New Tanneries Cluster																	18 month period allowed to construct all of the tannery buildings
Tanneries relocate from Magra El-Eion to New Tanneries Cluster																	All tanneries relocated out of Magra El-Eion by end Q4 2008
Process applied as above to non-tannery businesses with lag of one quarter, but can be at same time depending on reaction of individual businesses																	Need to extend action plan, but first check the above steps to working with the tanneries
Non-tannery businesses relocate from Magra El-Eion to New Tanneries Cluster																	All businesses relocated out of Magra El-Eion by end Q1 2009
Demolition of buildings at Magra El-Eion and site decontamination																	Site ready for redevelopment from start of 2010

9.2 Summary Statement Of Project Implementation Requirements

Memorandum of Understanding (MoU) to be Signed Between Main Parties

The MoU will cover the following topics, with more detailed information provided under each topic in Appendix 1. The relationship between the summary and the more detailed explanation in the Appendix is indicated by the numbers after each point.

- Clear definition of the project and its main elements, and clear statements on the objectives of each element, the boundaries of the Magra El-Eion site .
- Recent developments that have resulted in changes to the project (5).
- Closure programme of all businesses located within Magra El-Eion and the requirement for public announcements (6).
- The package of assistance that is to be made available to businesses located within Magra El-Eion (7).
- Uncertainty over the capital costs for implementing the Robikki Project (8).
- Requirement for Feasibility and Financial Assessment study (9).
- Production capacity of the new tanneries to be established at Robikki, with there to be a single phase of construction (10).
- New set of national production and environmental standards for processing tanned leather within Egypt. Application of Egypt's existing environmental legislation to the tanneries sector. (11 and 12).
- Management of project implementation (13) and the clients of the management team (14).
- Implementation and delivery of first element of the overall project (15 and 16).
- Completion of survey of Magra El-Eion area (17).
- Costs of project management mechanism and steering committee (18 and 19).
- Leather Technology and Service Centre (20).

- Premises within Magra El-Eion (21).
- Implementation and delivery of second element of the overall project and the links between this element and the first element (22, 23 and 24)..

9.3 What Is Required To Make The Project Work

1. Clear definition of the project, which has two overall elements:
 - Relocation of the businesses out of the Magra El-Eion based on four options: participate in establishing a new tannery cluster at the Robikki District of Badr City; relocate to other locations of their choice, but without the benefits of being part of the new tannery cluster; establish other new businesses that are not related to the tanneries sector; take retirement.
 - Redeveloping the Magra El-Eion site that combines: generating funding to part finance the implementation of the first element; meeting social and community objectives for utilising the site; and realising its commercial development potential.

The physical development of the site at Robikki, including: the infrastructure works; the tannery buildings; the buildings for other associated businesses; and housing; and social / community support facilities, may be included under the first or second elements, depending on the funding structure of the overall project. The development of the Robikki site will be progressed as one of Egypt's first Industrial Parks to be established under the auspices of the General Industrial Development Authority. In this context the role of the Robikki Industrial Park may be broadened to include more than one cluster.

2. Clear statement that the over-riding objective of the first element is to ensure the tanneries that relocate to the Robikki District will maximise the level of added-value to their input materials and will have profitable long-term futures.
3. Clear statement that the over-riding objective of the second element is to ensure that the environmental problems associated with the Magra El-Eion site are stopped completely and the site is fully decontaminated before starting any redevelopment activities. Non-tannery service businesses, and artisan business activities, that must relocate from the site to meet the environmental objective can return as part of the redevelopment project.
4. The second element of the project must have defined boundaries that are made public as quickly as possible. There must be a clear government

statement that any business activity within the defined area will have to close itself within a specific timescale to avoid being compulsorily closed. Linked to this must be a further statement that all buildings within the defined area will be demolished within a specific timescale.

5. A recent development has changed the way the overall project is being progressed:

- The setting-up of the General Industrial Development Authority and the emphasis on the establishment of Industrial Parks has opened-up the opportunity for the development of the Robikki area to be progressed under the new approach and for the funding mechanism to be based on the establishment of a Public-Private Partnership (PPP).

6. The current (secretive) approach that the tanneries within 50 m. of the boundary will be closed first must be dropped, with clear statements associated with point 4 that all business are expected to close within the same timescale – there will not be any phases to the closure programme. This needs to be stated clearly as Government of Egypt (GoE) policy to represent the “stick” factor in the overall psychology of the “carrot and stick” approach. The stick factor needs to be publicly announced just ahead of offering the “carrot” factor to give a strong message that the relocation will happen compulsorily, as happened with the relocation of the fruit and vegetable market. Associated with statements on the GoE policy towards the Magra El-Eion area should also be public announcements on the new quality standards and application of existing environmental legislation.

7. Immediately after announcing the “stick” factor there should be a highly effective communication campaign, implemented first with the tanneries, to announce the package of support, that will represent the “carrot” factor. This package must include:

- Indicative costs of establishing complete new tanneries at Robikki, including all capital costs. This may be presented with size options.
- Proposals on how these costs will be met and the share to be financed by the tannery owners. Options for how the tanneries will finance their cost share.
- Indicative operating costs for the new tanneries, how these costs differ from now, and how the tanneries will cover these additional costs. A key issue here is to relate the additional operating costs to meeting the new quality standards and environmental legislation, rather than to the relocation element.

- The full range of business development, technical, technology and training assistance that will be made available to the businesses that commit to relocating to Robikki, before, and after, the move.
 - The postponement of implementing the “stick” factor for a period of say two years to allow the package of support to work. This postponement must be publicly announced with an end date beyond which the package will no longer be available and the “stick” factor will start to be applied.
8. It has become evident recently that the capital costs associated with implementing the construction works at Robikki are not as “hard” as previously presented, with many of the key budget lines being rough estimates. The “hard” costs are those where contracts have been signed, and include: external infrastructure; internal networks; and the first phase of the Leather Technology and Service Centre, with a total cost of EGP 104.8 mn. All of the other costs are estimates, with these items including: the wastewater treatment facility; construction of all buildings, except phase 1 of the Leather Technology and Service Centre. These items have a total current cost of EGP 216, representing 67% of the total costs identified by IMC (Technical). There is therefore still considerable uncertainty over the capital costs associated with constructing the new facilities at Robikki.
 9. Up to now there has not been any rigorous financial assessment of the first element of the project. It has been recognised by Italian Co-operation that this is an essential next step if the overall objective of the first element (see point 2) is to be achieved. Italian Co-operation are therefore currently funding a Feasibility and Financial Assessment of the first element to ensure that all stakeholders have confidence that the overall objective of the first element can be achieved.
 10. All parties must agree that the first element has been significantly reduced in scale from the original 248 mn sq ft of production capacity (indicated by ASSOMAC in their 1997/98 report) to a level that will be between 50 and over 100 mn sq ft, with the exact level to be defined through a detailed study. This level may be increased at a later date depending on: the level of domestically sourced raw hides; minimising (stopping if possible) the export of raw hides and skins, and wet blue. The first element will no longer be referred to as having three phases, with this element now to be implemented in a single phase.
 11. A new set of quality standards must be set for the processing of tanned leather which include: the characteristics of the leather product; testing of chemicals and products; vocational training requirements; the application of chemicals; and the treatment of liquid and solid waste. A statutory timescale must be set for every tannery in Egypt to comply with these minimum standards, with an inspection activity implemented to monitor compliance.

12. Egypt's environmental legislation must be applied, at the national level (including Basateen) to every investment that has been in tanneries that fall within the scope of the articles of the legislation.
13. The management of the implementation of the project needs to be moved out of the IMC (Technical) into a dedicated Project Management Unit (PMU) that has the remit to co-ordinate the delivery of both elements and to cover all of the required activities under each element. The PMU should have a representative office (One-Stop-Desk) within the Magra El-Eion area that should be open to respond to requests for information from any business located in the area.
14. The clients of the PMU, and the beneficiaries of the first element of the project, will be, first the tannery businesses, and second all of the other businesses, located in the Magra El-Eion area. The tanneries should be viewed as being first as when they relocate they will pull the related businesses with them.
15. The implementation of the first element should be split into:
 - Activities that will be delivered while the businesses are still located at Magra El-Eion.

Activities that will assist with the relocation of the businesses to Robikki.

- Activities that will be delivered to the businesses after they relocate to Robikki.

The delivery of all of the activities should be co-ordinated through the PMU, this does not mean that the PMU will be responsible for managing the delivery of every activity, as some delivery contracts have already been issued. There will be a preference for contracting through the PMU, where delivery contracts have not yet been issued. The areas where contracts have already been issued, and integration will be required with other PMU activities are:

- ASSOMAC on technical support to the first element.
- IMC (Technical) on engineering design for the Robikki site development.
- INESCOP on the delivery of Spanish aid to support the establishment of the Leather Technology and Service Centre.
- INESCOP to deliver the EU's EcoTan project to establish a mobile wastewater treatment facility.

- GTZ and its selected trainers to deliver training through the Amreya Leather Training Centre.

The PMU will relocate to Robikki with the businesses to continue to deliver support for a period of one year after the last tannery business has relocated.

16. The delivery of the first element of the project will involve a transformation of the existing businesses into modern and internationally competitive businesses that will operate as Egypt's leading cluster of tanned leather, leather products and related activities. The transformation process will be directed at: the tanneries to move to producing high quality finished leather; the industrial glue producers to use the input material (by-product from the tanning production process) to produce edible, or pharmaceutical, gelatin; and the leatherfibre board manufacturers, where the process of adding-value has still to be determined. If there are not any leatherfibre board producers in Magra El-Eion there will be greater freedom to determine what to do with the relevant by-products from the tanning production process. The transformation of the industrial glue manufacturers will become an integral part of the delivery of the first element of the project. A decision will be made later about the possible integration of a leatherfibre board element.
17. The survey of the area must be completed by the Cairo Governorate with the complete results (zone 4 is incomplete) provided to ASSOMAC to be able to complete the analysis of the results. If the area that has been surveyed is found to be less than the total area specified at point 4 above, the survey will be extended to cover the missing areas.
18. The core costs of operating the PMU will be met by Italian Co-operation for a period of [to be specified as part of finalising the MoU], with the PMU team members already having been selected and contracted through ASSOMAC. The delivery of other activities through the PMU will include overhead contributions and will cover the PMU's operating costs associated with the delivery.
19. A Steering Committee will be set-up by the Ministry of Foreign Trade and Industry to oversee the implementation of the overall project, to ensure the commitments to funding activities are being met on time, to resolve problems over project implementation and to assess the impact of the project.
20. The Leather Technology and Service Centre (LTSC), to be established at Robikki, will be an integral part of the first element of the project, with any capital and operating cost implications for the tanneries being clearly indicated. A first stage of the LTSC will be established for an interim period at Magra El-Eion to support the up-grading of the businesses, before they relocate.

21. The Government of Egypt (GoE), represented by the Ministry of Foreign Trade and Industry (MoFTI), will find suitable premises within Magra El-Eion, including up-grading an existing building if this is required, to provide facilities for the following:
- The PMU office within the Magra El-Eion area.
 - Meeting place for the businesses to be briefed on progress with implementing the overall project.
 - Training room for delivering management development and off-the-job vocational training.
 - The temporary LTSC – this is likely to be a restricted range of services compared to those that will be made available through the final LTSC, at Robikki..
 - An area for accommodating the mobile wastewater treatment vehicle, under the EcoTan Project.
22. A separate exercise is required to start urgently to undertake a study of the redevelopment potential of the Magra El-Eion site based on the assumption that the implementation of the first element of the overall project is successful and the area that is specified at Magra El-Eion, see point 4, is completely cleared, decontaminated and ready for redevelopment. The need for urgency in this area of activity is to have realistic results on the level of funding that can be generated from the second element to support the implementation of the first element. This activity will be progressed by the Financial Schemes Component of IMC (Development).
23. The implementation of the second element, as a property development project, must be closely integrated with the implementation of the first element to ensure the funding link between the second and first elements operate effectively and give maximum benefits to the businesses under the first element. Meeting this requirement will require an integrated Project Management Unit to co-ordinate the implementation of both elements.
24. The link between the second and first elements will operate as a Public-Private Partnership (PPP) to act as a pilot project for the General Industrial Development Authority on how PPP's can be applied to the establishment of Industrial Parks in Egypt.