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NEEDS ASSESMENT OF THE COTTAGE INDUSTRY SECTOR

IN THI-QAR GOVERNORATE

IRAQ

FINAL REPORT

UNIDO Project No.: FN/IRQ/04/001

JULY 2005

HAP Consultants
Jerismosevej 9
2670 Greve
Denmark

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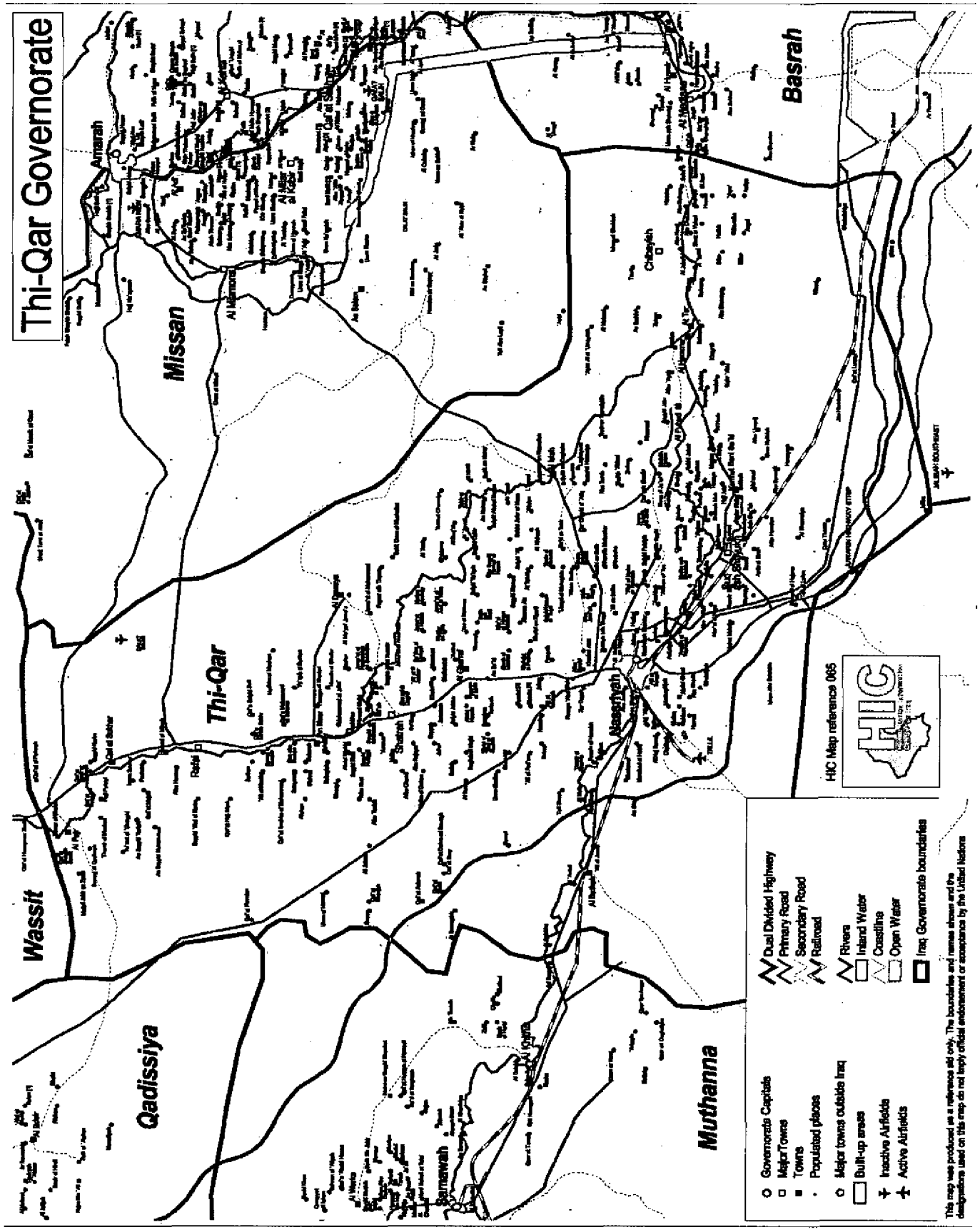
LIST OF ABREVIATIONS

CIFC	Cottage Industry Facility Centre
CTA	Chief Technical Adviser
FAO	Food and Agriculture Organization of the United Nations
ID	Iraqi Dinare
IDP	Internally Displaced Persons
NPC	National Project Coordinator
UNIDO	United Nations Industrial Development Organisation
WFP	World Food Programme

Exchange rate at the time of the field mission, April 2005: 1500 ID equivalent to 1 USD

1 Donum = 0.25 Ha

MAP OF PROJECT AREA



1. INTRODUCTION AND FIELD MISSION TO THI-QAR

In December 2004, HAP Consultants was invited to submit a bid for the joint UNIDO/FAO Cottage Industry Needs Assessment project in Thi-Qar Governorate, Iraq.

Based on the proposal HAP Consultants was awarded the contract for the execution of the needs assessment. Project discussions between representatives from UNIDO, FAO and HAP Consultants took place in UNIDO headquarter in Vienna. HAP consultants were briefed on the objectives and the planned mode of execution of the project.

This report summarises the findings and recommendations of the needs assessment Mission.

As part of the per-project preparation, HAP Consultants participated in the Project Steering Committee (PSC) meeting in Amman from the 6th to the 7th March 2005.

The fact-finding was carried out by:

- Claus Perch, Team Leader (Agro industry)
- Dennis Madsen (Socio-economist)

During the field trip to Thi-Qar the Consultants were accompanied by:

- Yussur Hammond, National Project Coordinator (NPC)

The field mission for the needs assessment took place between April 11th and April 26th 2005. The prepared food and crafts/handicrafts questionnaires formed the basis for the survey of existing cottage industries. Data for the survey was collected in the period April 16th and April 27th by the appointed local support team consisting of district staff from MOA and MOLSA.

This Report is divided in two parts. The first summarises the findings and recommendations of the needs assessment for the cottage industry project. The second contains Annexes with descriptions and cost benefit analysis of the projects which have been identified to be supported by the project, as well as agricultural data for Thi-Qar Governorate and field mission pictures.

The consultant wishes to thank all parties involved for their kind and valuable assistance. All opinions expressed and conclusions in this report are the sole responsibility of the Consultant, and not necessarily shared by UNIDO/FAO.

2. EXECUTIVE SUMMARY

The objectives of the project are to reduce poverty in vulnerable households by job creation through the promotion of appropriate cottage industry activities. The immediate objectives are to introduce vulnerable households to small-scale income generating activities and upgrade skills of existing households engaged in cottage industries. To facilitate this development producer associations and cottage industry facility centres should be established.

There is a need for the cottage industry project to curtail poverty amongst a sizable part of the population, create employment and hence contribute to the economic development and hereby increased stability in the region.

Cottage industries are not wide spread in Thi-Qar. In the rural areas cottage type industries exists, but there are not many different types. The most common is milk processing, some date packing mainly in bulk, carpets weaving, various types of products made from reeds and a very limited number of households producing preserved vegetables.

The potential 40.000 milk producers in Thi-Qar is the largest single group of cottage industries. They process the raw milk as a necessary activity to preserve and sell it, more than a conscious activity adding value to the product.

This might explain why many of the agricultural households, with the exception of the carpet weavers, wishes to revert to the pre war mechanised processing methods by supplying their milk to dairies, mechanised date packing plants and vegetable canneries. The agricultural producers do not see the processing as a mean to increase the value of the product, but mostly as a need to be able to sell the product.

Most cottage industry activities in the urban areas are related to production of functional products such as furniture, building material, clothes etc and providing service for repairs and maintenance. Most of these workshops are more micro enterprises with an owner and up to 10 employees, than family operated household enterprises.

The more traditional artistic urban cottage industries where the skills are passed from one generation to the next, such as pottery, ornamented metal works, musical instruments etc. were not found in the province.

One of the goals of the survey was to identify existing privately owned processing plants in need of repair and or equipment in order to render the plant operational. No such plants were identified by the survey.

Many of the persons interviewed did not have a clear perception of cottage industries in general and the objectives of the project in particular. It was commonly believed that the project would provide assistance for the establishment of small to medium scale processing plants. This view of establishing larger mechanised processing plants for the agricultural sector was shared with some of the local authorities. The project should there for devote considerable efforts in presenting the idea and benefits of developing cottage industry to all stakeholders.

There are no or very few producer or service associations. Previously there was a widespread net of government controlled cooperatives mainly administrating the supply of inputs at subsidised prices. They still exist, but their role has been reduced. They lack finance, and have generally to compete with private firms at market conditions. At the time of the visit there were no final legal statutes for associations. The mission was informed that it was possible to form associations, but deed and collective ownership of assets and debts were still not resolved.

Data and information has been perfected by an increased local project staff since the consultants' field mission took place. The project activities have as a result of this been modified somewhat compared to the consultant's original suggestions. Decisions taken by the management have not in all cases been detailed to a degree where the consultants could produce relay-able cost estimates. Where missing costs will have to be included by the management according to the ongoing execution of the project.

The proposed project will introduce some 2500 persons/households over a 3 year period to different kinds of cottage industrial activities. It will improve the skills of about 950 persons in year 1 of whom 800 will graduate.

The cost of upgrading skills and direct assistance is estimated to a total of about 1,700,000 USD of which 1,25Mio USD is to be paid by the project for all activities in year 1. This should be followed by 2 years of locally financed assistance by MOA and MOLSA at a cost of about 450.000USD.

The proposed activities are financially viable with simple accumulated benefits over a 3 year period of about 1,500,000USD.

A mood of impatience is prevalent amongst the beneficiaries. The South, having suffered extensively during the past 20 to 30 years have high, and quite likely unrealistically high expectations to what a project like this can achieve within a short time span. Unrealistic as it may be, it is however the real situation and whatever can be done to show early results will be useful in bringing about a peaceful development.

3. PROJECT BACKGROUND

3.1 The project area

The population of the Thi-Qar Governorate has increased from 1997 to 2003 with 30 percent from 1.1 to 1.5 Mill persons. There is only one other Governorate in Iraq with similar or higher population increase. A part from natural courses this increase is partly due to a concentration of Internally Displaced Persons (IDP) Marsh Arabs who was forced to move away from their residences of origin in the Marshlands and partly due to returnees from the reverse Faradisation policy taken place in Keokuk after the return of Kurdish families in the north.

The majority of IDPs are located in the districts of Nassiriyah, Suq Al-Shoyokh and Al-Chibayish. WFP estimates that there are around 200.000 persons in Thi-Qar who are chronically poor in need of permanent assistance.

There is about 60 percent urban and 40 percent rural population in Thi-Qar. 75 percent of the rural households owns and or have access to land. 25 percent are landless farm workers. Most of the urban population is occupied in service- and the public sector. There are practically no operational industries, and unemployment is quoted to be around 40 percent, which seriously influences the economy and the stability of the region.

3.2 Raw Material Quality and Availability

Local raw material for bricks, cement blocks and tiles, is available for the building industry in Thi-Qar but clay and sand from the area contains too high levels of salt. Process water used in the building industry is often polluted with high organic matter content resulting in poor quality and non-durable finished products.

Wood, chipboard and laminated panels are imported and supplied from Baghdad. The quality is poor, which probably is more price than supply related. The situation is similar for metal and construction iron.

The agricultural production in Thi-Qar has decreased over the last decade, partly due to the draining of the Marshes, which caused a decrease in the livestock population, fodder reserves, rice production as well as fisheries, and partly due to:

- Lack of inputs due to the embargo
- Lack of proper drainage causing high salinity
- A state controlled subsidised price and distribution system for both in- and outputs
- A large cereal import under the Oil for Food Programme discouraging local production

The productivity and output level in the agricultural sector is low. In the liberalised transition economy gradually taking over from the previous state planned one, farmers face on the one hand liberalised high input prices and on the other limited purchasing power of a large proportion of the consumers due to unemployment, lack of investments and the general unstable security situation of the country. The combined effects is a situation where there is little or limited raw material surplus to be processed at competitive prices.

The agricultural production in the province amount in average to: 40 kg cereals, 28 kg dates, 14 kg vegetables and 0,5 kg oilseed, 100 kg milk and 19 kg meat per inhabitant see Annex 5. These figures do not take cereal import and food aid into consideration and the sources on which these figures are based are indicative only, but it shows that in general there is not a major surplus for processing.

The main agricultural raw materials are:

- Milk
- Beef, mutton and goats
- Hides
- Poultry
- Wool
- "Reeds"

Vegetable are produced in relatively small quantities, fruits not found in the region, oilseed mainly sesame is produced in very limited quantity.

Secure storage of agricultural inputs and spare parts are lacking. The Supply Company under the MOA regards this as a contributing factor for the insufficient use of inputs in the agricultural production.

A major problem for any processing activity in Thi-Qar is the lack of constant electricity supply. In Nassriyah, all small repair shops specified this as their biggest problem. Many have 3 hours electricity and 3 hours without.

3.3 Agricultural Machines

In general there is a lack of tractors, combines and agricultural machines.

Extrapolating the figures from the FAO household survey (415 interviewees) to the province level there should be 8,800 tractors, 153 combines and 38,000 water pumps in the province. The FAO survey did include about 36% machines which was not operational.

It was reported that 40% of all operations are carried out manually. Many small farmers rely only on manual cultivation. Most of the responses from the districts did, however, indicate that ploughing, levelling, furrowing and harrowing are made by tractor.
There is 173,000 ha winter crops grown in the area with 4,500 tractors each tractor should cover 40 ha.

Most of the District responses show that distance from farm to repair shop is too large. Tractors and combines pose a particular problem because hydraulic system including electronic control systems cannot be repaired in Thi-Qar. These have to be transported to Baghdad, which is costly and time consuming.

Spare parts are only, if at all available in Baghdad, resulting in long repair times. The consultants were informed that it could take up to two months to get a spare-part. This is a major problem for the timely execution of agricultural operations. Some parts are being made

locally, but the machines and equipment in metal workshops are old and worn resulting in poor quality work.

3.4 The Cottage Industry Sector in Thi-Qar

During the past 15 years, people have been forced to cope with an unstable economic, social and political situation, which have necessitated ingenuity and self-reliance. As a mean to survive many have been forced to find market outlets for their products which previously were handled by larger processing units, and some have started small productions of various kinds.

The cottage industry sector in Thi-Qar is not seen as one coherent sector. It can be divided into a rural and an urban part, which are barely connected. There is only limited small scale processing of agricultural products in the urban areas and likewise practically no processing or outsourcing of non-agricultural productions in the rural areas. The mission did not find any urban cottage industries being based on processing of agricultural raw material apart from bakers and a few persons making preserved vegetables.

Cottage industries are not wide spread in Thi-Qar. In the rural areas cottage type industries exists, but there are not many different types. The most common are milk processing, some date packing mainly in bulk, carpets weaving and various types of products made from reeds. A very limited number of households in both rural and urban areas produce preserved vegetables.

The urban cottage industry is more micro industries with an owner and up to 10 employees than family operated cottage industries. Most are engaged in traditional crafts and services as tailors, bricklayers, carpenters, plumber's cabinet-, furniture makers, auto mechanics and electricians. It has not been possible for the mission to identify more specialised crafts traditionally characterised as cottage industry such as e.g. music instruments builders, artisan craftsmen making pottery, ornamented metal works etc.

In Thi-Qar there are especially 2 sectors which have increased over the past years these are: The building industry and the wood and mechanical workshops. Training and employment is handled by and large handled by the sectors themselves. Unskilled person are taken on as apprentices, learn the trade and after some years open up his own shop.

The main rural cottage industry is milk processing. Fresh milk is turned into yoghurt and fresh white cheese. There is a potential 40.000 farming households processing milk products. This is by fare the main rural cottage industry activity.

The second largest rural cottage industry activity is carpet weaving. Weavers are found both in the rural and the urban areas, where urban weavers are more into weaving of cloth and the rural once concentrate on carpets, bags etc.

Reeds are available in large quantities. Varieties of products are made from reeds: Mats, partitions, windbreaks, construction panels, and traditional houses. Reeds products are found in the Central market of Nassriyah as well as in the outskirts of the city. It appears that the supply is larger than demand.

The rural cottage industry sector in Thi-Qar is characterised by two groups:

- A large number of producers making relatively few products (milk, dates, carpets, reed products). Here efforts should be concentrated on improving the quality, add value, but not on expansion of the quantity
- The second group is few producers and few products (pickles, preserved vegetables and marmalade). For this group there is scope for rationalisation, improved quality, added value and expansion of production

There is no particular policy for developing cottage type industries in the area and no incentives given to cottage type industries. On the other hand, there is also no strict enforcement of tax, regulative and administrative rules. The establishments of new businesses are not restricted by bureaucratic procedures.

3.5 Farmers Organisations

Traditionally, most farmers were organised in cooperatives. The main activity was to supply inputs and in some cases buying farm products. These still exist to day and the farmers now elect the board. With the liberalisation of the economy, the role of the cooperatives has changed. They are no longer the sole supplier of inputs, and their position has generally weakened. The cooperatives do not engage in processing of agricultural products.

No producer associations exist in Thi-Qar. There is a farmers union, which has a political function, but do not engage in production or processing of agricultural products.

Based on the experience most rural families relay on themselves. They have strong ties to the family and to a lesser degree to fellow members of the tribe. They are hesitant to enter into cooperation with persons outside the family and the tribe.

3.6 Finance

Most family businesses are financed by own means and or the unofficial credit providers. Guarantees are often given by family, friends and fellow members of the tribe. In some cases, NGOs provide some guarantees for small loans, and in rare cases commercial banks are used. Collateral is given in fixed assets as houses, cars etc.

In Thi-Qar the Agricultural Bank is not a major provider of credit and operating capital. In Basrah, however, the Agricultural Bank has started to be considerably more active from the production season 2004/2005 giving short-term credits to tomato farmers.

In the response to the questionnaires lack of credit facilities at moderate interest rates is given as the major problem facing farmers in Thi-Qar, because input prices in general have increased more than output prices.

3.7 Institutional Support and Capacity

Technical assistance to farmers and the urban population is given by MOA and MOLSA both operating extension services and training centres. Local NGOs are also active in training and assistance to particular the urban population. In the responses given in the questionnaires, no

one has mentioned technical support as inadequate or as a factor, which could help overcoming some of the current production problems.

The MOLSA training centre in Nassriyah has both the physical facilities and the administrative capacity to conduct training courses required by the project. The centre does have a number of metal working machines, which however is best suited for formal training. The equipment is insufficient to carry out comprehensive repair of e.g. modern tractors and combines.

MOA and MOLSA does have the institutional capacity to manage and administrate the training component of the project.

3.8 Tribal Support

There are about five main tribes in Thi-Qar. They play an important role in the social network and coherence in the area. It is important to secure the cooperation of the tribes for the execution of the project. The tribes should be consulted in the initial phases of the project.

3.9 NGOs

There are a number of International and local NGOs operating in Thi-Qar and the Southern Iraq. A list of all NGOs active in southern Iraq is given in Annex 12. NGOs active in the other 3 southern provinces could also operate in Thi-Qar. The list is not exhaustive, since HAP met two NGOs that were not on this list. It is recommended to engage one of the NGOs in the execution of some of the project activities.

Generally, the international NGOs still functioning in the area is manned with local staff only, and keep a very low profile. Most international NGOs still present in Thi-Qar operate in the health, water and the education sectors.

Since the NGO situation changes rapidly it is recommended to contact the DIFID mission stationed at the Italian military camp. Contact person (Ms. Agger), she should have an up to date situation report on suitable NGOs since part of the DIFID program target capacity building of local NGOs. A second source is the dean of the University, who likewise is familiar with capable NGOs in the area.

Finally GOAL, engaged in hospital care, health assessment, water & sanitation, nutrition, emergency, training. Has a coordinating role for mostly foreign NGOs activities in the Thi-Qar governorate.

3.10 Existing and Planned Projects in Southern Iraq

HAP Consultants has reviewed lists of ongoing and planned projects from the UN Organisations, NGOs and Bilateral Donors.

The largest number of projects and the largest sums are concentrated on rehabilitation of irrigation and drainage structures. There is one project in Basrah Governorate sponsored by USAID, which deals with the rehabilitation of small-scale industries. The Consultants have visited USAID to discuss their project. It is not yet operational and will apparently not be initiated within the near future.

DFID is present in Thi-Qar Governorate but they concentrate mainly on capacity and institutional building of public administrations and some large-scale private companies. The project also collaborates with NGOs in the area and it is recommended that the cottage industry project keep contact with DIFID to share information and experiences.

Other projects of interest could be the approved UNIDO dairy development project, and the proposed date palm rehabilitation project. Some NGOs dealt with rural credit schemes; none are, however, operational at present.

4 FINDINGS

4.1 The Cottage Industry in Thi-Qar

During the past 15 years, people have been forced to cope with an unstable economic, social and political situation, which have necessitated ingenuity and self-reliance. As a mean to survive, many have been forced to find market outlets for their products, and many have started small productions of various kinds.

This being said the cottage industry sector in Thi-Qar is relatively small, but the potential is considerable due mainly to the general level of education and technical training in the country. Small scale processing of agricultural products in the urban areas could be developed and outsourcing of non-agricultural productions should be encouraged in the rural areas.

Cottage industries are not wide spread in Thi-Qar. The previous regime did not favour the development of cottage industries. On the contrary, it developed dependency on state structures and discouraged individualism and individual collaboration. The cottage industry on the other hand, builds on independence, self-reliance and collaborations in short – entrepreneurship. Many do have a flare for trade and business, but lack specific technical and managerial skills. The project could play an important role in providing the beneficiaries such skills.

The development of rural cottage industries is hampered by low productivity and a general lack of raw material. The rural cottage industry is characterised by:

- A large number of producers making relatively few products (milk, dates, carpets, reed products). Here efforts should be concentrated on improving the quality, add value, but not on expansion of the quantity
- The second group consists of few producers involved in small-scale production (pickles, preserved vegetables and marmalade). For this group there is scope for rationalisation, improved quality, added value and expansion of production

The rural cottage industry lack:

- Uniformity of produce
- Quality control (own and public)
- Suitable and affordable packing material
- Collective sales and buying power to retain a larger share of the value at the farm/production level

The urban cottage industry is more micro industries with an owner and up to 10 employees than family operated cottage industries. Most are engaged in traditional crafts and services as tailors, bakers, bricklayers, carpenters, plumber's cabinet-, furniture makers, auto mechanics and electricians. It has not been possible for the mission to identify more specialised crafts traditionally characterised as cottage industry such as e.g. music instruments builders, artisan craftsmen making pottery, ornamented metal works etc.

In Thi-Qar there are especially two areas, which have increased over the past years: The building industry and the automobile service sector. Training and employment is primarily

handled by the sectors themselves, with some formal technical vocational training being provided by MOLSA. In many cases, unskilled persons are taken on as apprentices, and after some years of experience open up their own shops. Due to the political, social and economic instability in the country many of the highly skilled technicians previous available in the province have been employed in foreign companies or abroad.

There is no particular policy for developing cottage type industries in the area and no incentives given to cottage type industries. On the other hand, there is also no strict enforcement of tax, regulative and administrative rules. The establishments of new businesses are not restricted by bureaucratic procedures.

4.2 The Capability of the Existing Cottage Industry/Micro Enterprise Sector

There is a large amount of wood, metal and mechanical workshops in the province. Some of them show great ingenuity producing under difficult conditions, old equipment lack of constant power supply and poor quality raw materials. HAP Consultants have visited a few of them. Common for the once visited were that they had old machines, which often could not be adjusted to an acceptable tolerance.

The sector is however, capable of producing some of the items needed by the project for the beneficiaries. Planning and coordination is needed since many workshops are specialised in one or few operations. It might therefore be necessary to engage a main contractor - lead workshop - who out sources part of the activities.

Machines and hand tools are generally available in the country. Not all might be found in Thi-Qar, but Baghdad and to some extend Basrah can supply most. HAP Consultants is of the opinion that provided payments are secure most workshops can arrange to get the required equipment. Equipment is not judged to be a major limiting factor. Quality of workmanship and raw material is more in demand.

It is proposed that the on the job training in the Nassiriyah training centre will be based on the production of items for the beneficiaries.

The following equipment was not found in the workshops visited by HAP Consultants. This does not mean that it does not exist in the province.

- Woodworking - milling with machine table, for joining and notching. Lathe for wood
- Specialised control instruments for repair of hydraulics
- Hydraulic press
- Metal works - machines and equipment for stainless steel processing. Welding, polishing bending (in cold state) etc. HAP Consultants was informed that there was no workshop capable of working with stainless steel in the province
- Forgeries - HAP Consultants was informed that there was no workshop with forgeries in the province

The following items could be produced locally:

- Looms
- Spinning wheels

- Carting drums
- Shafts for hand tools
- Bee hives (if applicable)
- Stainless steel parts for the dairies
- Sorting tables, cleaning vessels etc for the date packing units
- Simple cooking vessels etc for vegetable processing and preservation
- Possibly reed press if design can be provided (if applicable)

4.3 Demand and Buying Power

With 40 percent unemployment in cities and underemployment in the rural areas, income levels and buying power are low for large parts of the population.

This being said it seams that there is a moderate increase in the economic activities over the last year. The new government introduced a minimum monthly salary of 200,000ID for government employees, which had a spill over effect on the private sector. Although salaries are generally lower in the private sector they followed the upward trend.

The last year has seen a marked increase particularity in the building sector. Construction is the main expanding economic sector in Thi-Qar as well as in other parts of the country. This is reflected in the price of e.g. cement which has gone from 110,000ID per ton to 193,000ID. Inflation and exchange rates has been relatively stable in the same period, meaning that the price increase is mostly demand driven.

The automotive sector has increased rapidly over the last years. The same is true for communications and satellite televisions which have increased many folds. Many cars are imported second hand cars from neighbouring countries, but both items confirm the existence of buying power, and the willingness to spend on capital and consumer goods, which previously were out of reach for the majority of the population.

It is not only the consumer goods which are in demand. Prices for tomatoes have increased 30 to 40 percent in the last season, as a result of a somewhat lower production and increased demand. Al Bustan Brand of tomato paste produced in the central region of Iraq has increased 20 to 25 percent in Thi-Qar from one season to the next. Production was normal in the central region, so from a cost point of view the sales price could have remained stable, especially if buying power was low.

A contributing factor to the price increases especially for the agricultural products is the transition from a regulated market to a market economy. Input prices have increased more rapidly than output prices, and this is being reflected in the increased consumer prices. Still if there was a serious lack of buying power prices would tend to remain more constant.

The findings regarding local versus imported products are mixed. On one hand the mission was informed that imported clothes, shoos, and other consumer goods were preferred to locally manufactured once. On the other hand, Al Bustan tomato paste and locally produced honey from Basra has a retail price, which is about 25 to 30 percent over imported once. The quality of these local products does not justify the higher price. This fact is therefore contributed to a certain loyalty and preference for local products.

The demand for products produced by an emerging cottage industry is difficult to predict. There is a total lack of reliable updated statistical consumption, import and export data, which makes a systematic approach to the calculation of market demand out of reach for the Consultants. The estimates used in the cost benefit calculations for the individual projects recommended to be supported by the project are based on discussions and interviews with relevant individuals from the sectors in question.

The cottage industry survey has for some of the products particularly the milk processing given indications of a possible increase in the market supply of 25 to 30 percent at district levels. These figures should be taken as indications only, since they are based on absorptive capacity of the market without linking it to prices.

4.4 Absorptive Capacity

The absorptive capacity for the proposed training activities for the urban crafts is judged adequate for the majority of the workshops. General educational levels are good, sectors are expanding and the persons are motivated to increase there competitive advantage.

The technical skills of the personnel of the main training centre in Nassriyah are at a high level. With the additional training carried out by the project in management, marketing and finance these persons should be equipped to assist the beneficiaries.

The absorptive capacity for the activities directed towards female beneficiaries as sowing, spinning, weaving etc. are judged adequate for the technical skills. More coaching is needed regarding the entrepreneurial attitude, since the success depends more on the individual's capability to create a market for their products than on an unfulfilled consumer demand. For most of these products, import substitutes exist at competitive prices. Service, creativity, product adaptation to the market, salesman ship and managerial skills are all important elements to develop a market and create the need for the individual products. These subjects are also new to the trainers who have no practical experience in these subjects. It is therefore proposed that links to the business community be established to assist the trainers at the district cottage industry facility centres with practical advise.

The absorptive capacity of the persons engaged in food processing is more mixed. There are large producers with a good knowledge of trade and business management, and there are small existing producers who have little experience of the business environment.

The vulnerable groups will need a sustained assistance over a longer period, and practical assistance regarding finance, distribution and marketing. Smaller self-help producer associations should be created and possibly coached by a successful businessperson within the group or from outside.

4.5 Suggestions from District and Sub-districts for Projects

The following suggestions for projects to be assisted by the project have been given by the districts and sub-districts:

- 6 Dairy processing
- 4 Carpet weaving
- 3 Fodder plants

- 2 Date processing
- 1 Tomato canning
- 1 Fish processing
- 1 Cattle breeding
- 1 Net making
- 1 Agricultural processing plant

The number in front of the project is the number of districts proposing a particular project. There are 15 sub-districts in Thi-Qar, each was asked to name 3 types of cottage industries which could benefit the sub-district. The maximum number could have been 45. 20 responded and gave 9 types of projects.

The suggested projects are in line with the once received at the second PSC meeting. The reasons given for proposing these projects are different, but most see them as needed for the development of the agricultural production in the province.

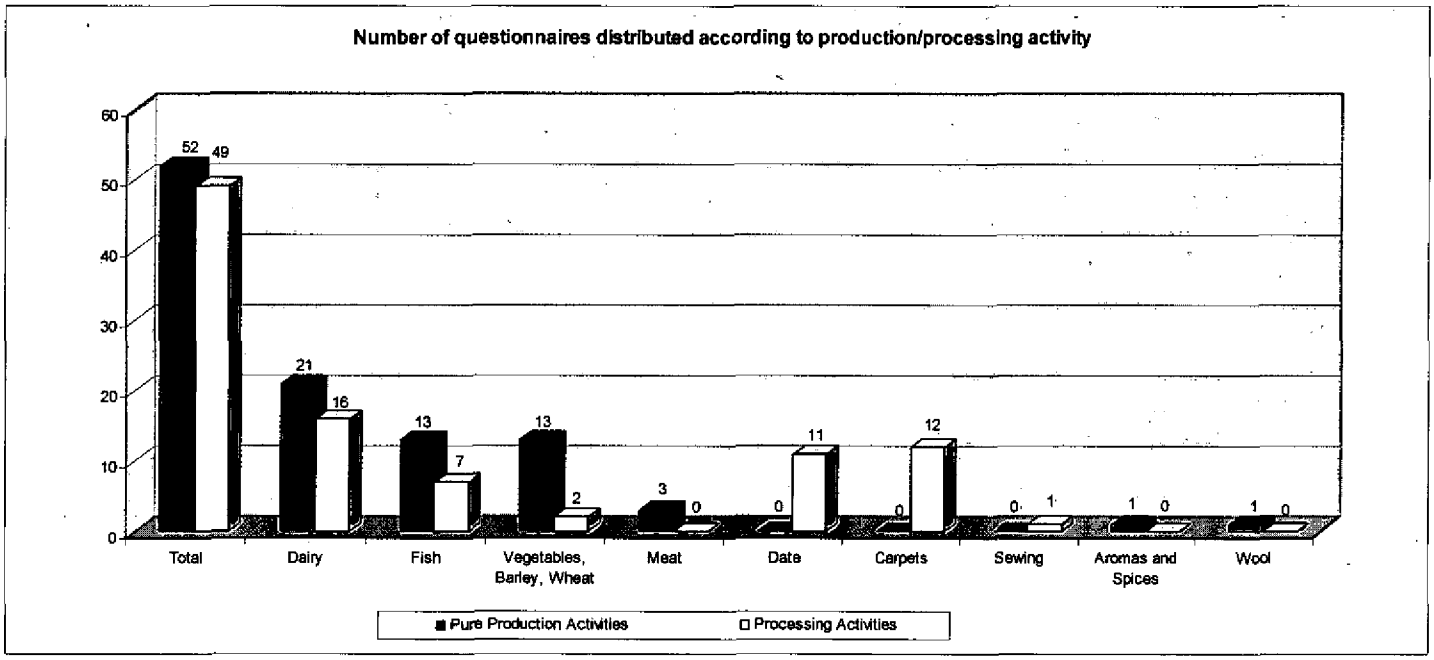
4.6 The Cottage Industry Survey

Cottage industry is in this survey not limited to household activities from 1 to 10 persons. If a sufficient number of persons and activities should be reached it is necessary to accommodate households, individual persons and micro industry in the terminology of cottage industry for this project.

In principal micro industries could be included in the project. The questionnaires were designed to accommodate larger processing industries, and if processing industries in need of few key pieces of equipment had been identified these could have been included in the project. However, according to the information and questionnaires received there are no micro industries in Thi-Qar in need of assistance. There might be some in the building material sector, but these will not be included in the type of projects to receive assistance from the project.

In consultations with the CTA in Amman the project area has been limited to the governorate of Thi-Qar. Time, logistics and the security situation has not permitted to include other governorates.

The following section gives an overview of the results of the cottage industry survey. The diagram below shows that nearly half of the 101 completed food and craft/handicraft questionnaires deal directly with processing industries. Of the 49 enterprises with a processing activity, fish net making and mats made of reeds will not be supported by the project. Thus the share of relevant cottage industries amount to 38.



The aim of the survey was:

- To identify existing cottage industries in need of repair and or machineries, which could become operational if assisted by the project. There were no existing cottage industries found to be in need of renovation.
- To identify if the war had an influence on the cottage industry activities. It was found that the war did not have any direct influence on the cottage industry in the sense that pre-war cottage industries had been destroyed and could become operational if assisted by the project. Indirectly the ware might have increased cottage industry activities, because jobless IDP and returnees have taken up activities similar to cottage industry. Like reed cutters, mat weaving, packing of dates in bulk etc.
- To identify problems and have the households suggestions for solutions. Most of the answers given in the survey dealt with general problems not specific for cottage industries. This is, as explained above, because most of the households are firstly producers of agricultural products and secondly processing enterprises.
- To identify demand. The answers stated in the questionnaires do not provide a quantifiable answer to the possible future demand.

The findings above are based on about 50 relevant interviews, taken from 11 of the 15 districts and sub-districts in the province. There might be exceptions to the findings shown above not identified by the survey.

4.7 Specific Findings

4.7.1 Projects to be supported

Carpentry/Joinery, Wood Working
It is estimated, that there is about a hundred wood workshops in Nassriayh alone, and probably some 650 in all of Thi-Qar. A common feature is the rather poor workmanship caused amongst others by lack of training and or use of old worn down machines and tools.

There is a thriving business in sale of second hand furniture, most of which is imported from neighbouring countries. There is a need for skill development and quality control improvement. Wood-workers can with training produce part of the tools and implements to be used by the project especially the female beneficiaries.

Motor Mechanic/Tractor Mechanic
There are enough mechanics in Thi-Qar, but there is a lack of:

- Specialised skills
- Quality craftsman ship
- Quality control
- There is a virtually a total lack of mechanics/electricians who can handle electronic and hydraulic control mechanisms in modern tractors and combines. This is a problem frequently raised in the questionnaires
- Lack of equipment and suitable workshops with sufficient gear to safely dismantle a tractor or combine for repair
- An acute lack of spare parts

The distribution of repair shops in the governorate is uneven, and in many cases, there are more that 30 km to a basic workshop, which can only make very simple repairs. HAP Consultants did see many mechanical workshops in Nassriayh, Suq ash Shuyukh and Al Shatra. Many of the larger once dealt mostly with repair of automobiles. In the centre of Nassriayh there were an estimated 30 to 40 small specialised workshops poorly equipped with few outdated machines and very little hand tools. They are specialised in repairing one type of machines: e.g. water pumps, small electrical generators, rewinding electrical motors etc. Some have one machine e.g. a lathe where the adjustment mechanisms are so worn that the product will not come out even.

There are no larger mechanical workshops for tractors and combines. More complicated repairs e.g. hydraulics, electronic control mechanisms etc has to carried out in Baghdad. HAP Consultants did not see or hear about any workshop equipped with lifting gear, cranes etc. where a tractor could be dismantled for repair.

Existing workshops with some specialised skills in agricultural machines repair in the main districts are:

1.	Chibayish	2 to 3
2.	Nassriayh	8 to 9
3.	Refai	10 to 12
4.	Shatra	10 to 12
5.	Suq ash Shuyukh	3 to 5

It was reported that the mechanics capable of carrying out repairs that are more complicated have left Thi-Qar for better jobs elsewhere.

It is estimated that there are 3 to 4,000 tractors and around 200 combines in Thi-Qar of which at least 35% is not functioning due to the reasons mentioned above. The exact number in working condition is not known, but the percentage is probably smaller than for the tractors, because combines are more difficult to repair.

The lack of repair facilities in Thi-Qar for tractors and combines is a major contributing factor to the low productivity in the agricultural sector it influences:

- Proper soil preparation
- Quality of operations
- Timeliness of operations
- Production costs

Welding/Fabricating, General Metal Works
There is a great number of small artisan type metalwork, but they mainly produce doors, windows, blinds and grits for windows. There is no larger workshop for production of machine parts etc. equipment for stainless steel welding is not found in Thi-Qar. There is no private firm where machines or parts for machines can be made to order.

Some of the larger plants like the power plant and the spinner do have own workshops, but they are only used for internal repair.

HAP Consultants was informed that there is neither manufacturing of machines in Nassriayh nor in Thi-Qar, except for a production of a crude form of hammer-mill used to mill dried fish into animal fodder. It was, however not possible to locate this plant.

There is a great need for improved welding and finishing techniques. In case agro-processing industries develop, it will be necessary to be able to weld stainless steel.

Blacksmithing
Metal tools made in Iraq are crude and lack finish and durability. As a result, customers prefer tools imported from China with better finish. The price is more or less similar for imported and locally produced.

None of the blacksmith was making parts and or repair of agricultural machines such as e.g. plough shears, ware and tare parts for harrows, disk ploughs etc.

HAP Consultants was informed that 40 percent of the farmers in Thi-Qar carry out all operations manually. With 60,000 rural households approximately 25,000 of these relay only on hand tools. Assuming that each household needs at least 2 sets of each of the following tools the total need could be 150 to 200,000 of:

- Hoes
- Spades
- Shovels
- Rakes
- Sickle
- Threshing (flail) although many use animals working in the grain and sifting it manually

To this number should be added the hand tools used by farmers using mechanised cultivation methods. Hence, the amount might be double. Assuming a life span of 2 to 3 years per tool the need will be about 200,000 pieces per year. The handles and shafts used today are often home made roughly cut branches or pieces of wood, which does not have an ergonomic

design but requires additional force. Productivity could be improved by the use of suitable designed durable tools and proper wooden shafts.

Very little, if any, forged parts are produced today in Thi-Qar. There is a need for production of e.g. plough shears etc. particularly because no spare-parts are available or difficult to obtain from Baghdad.

Sewing/Garment Making
There are about 150 to 200 tailors making both traditional and western style cloth. Each tailor shop has 2 to 3 persons working making a total number of employees in this sector about 500 in the Thi-Qar Governorate.

The clothes made by these tailors are reported not the most popular. Especially imported Chinese made clothes are in demand mainly because it is cheap. There is quit a good supply of this type of cloths in the market. In addition, there is a large second hand market for cloth of all kinds.

It is estimated that 200 to 300 women could benefit both financially and "in kind" by sowing for customers and family if the cottage industry facility centres and one or more capable NGOs in the area support them.

One area of interest could be the more elaborate dresses for women which is popular in the area. They should be made to measure, and designs follow traditional pattern imports of ready to ware dresses will therefore not be competitive.

Spinning
There is a large Spinnery in Nassriayh. This is currently not operating, but the Consultants were told that there are plans to start up the production. The factory is apparently in the process of hiring personnel. It is HAP Consultants impression that a future production will not have any direct influence on a cottage industry spinning activity, a part from a likely increase in wool price. There is a large wool production in the Governorate. HAP Consultants estimate that around 500 ton wool is produced per year. This is mainly sold via merchants to Baghdad.

The local NGO, The Union of Iraqi Women contacted by the Consultants expressed willingness to disseminate spinning techniques and train women. Currently, they do not provide training within this field, but some of their members possess knowledge of spinning.

By washing, carting, spinning, and using the spun wool for e.g. carpets value can be added locally and employment generated. There could be a direct link between this intervention and the development of a local production of spinning and carting machines.

Carpet making and weaving
Coarse quality carpets of the woven (Kelim) type and bags etc. are produced by individuals as a cottage industry. Colours are bright, synthetic once and patterns simple. It is difficult to assess the quantity produced since most of the production is sold to merchants who sell them outside Thi-Qar.

Two larger privately owned carpet-weaving workshops were established in 1993 and 1995 in Al Garaf employing about 450 persons. These were abandoned two to three years ago and do not function any more.

The two workshops had a size of 60m x 15m = 900 m^2. Each one contains 35 iron horizontal looms. The types of carpets produced in the shop were:

A - Tabrez type 3m x 2.5m
B - Kashan type 2m x 3m
C - Solaf type 3m x 5m
D - Karkak type 1m x 3m

The quantity of the production was 10 to 12 carpets per month. The quality of the production was good (grad A). The products were marketed outside Thi-Qar.

It is not judged feasible to revive these factories because they are privately owned and do not target the beneficiaries identified by the project. In addition, mainly child labour was used. There is no close market for the products, requiring an export organization which does not exist today.

Local looms exist as can be seen from the picture above. These looms are crudely made but function. They are suitable for the current production of coarser woven carpets and mats. It would be too costly for the beneficiaries to acquire foreign made looms for the ordinary carpet production.

The emphasis for the assistance from the project for the carpet production should therefore be on improved skills, design and dies.

For the production of finely woven "Abayas" better quality looms are required. The training of wood-workers by the project could provide assistance to a local production of such looms. This could be done by introducing looms as objects to be produced in the training program for carpenters and wood workers.

The training centre in Nassriayh and some of the CIFC should be furnished with a total of 12 looms, suitable for weaving of very fine material. 2 looms shall be delivered to the training centre and used as models for the trainees whereas the other 10 for the CIFC should be used for training of beneficiaries.

Design, dies and weaving techniques of locally produced woven carpets should be improved. The production of "Abayas" should be facilitated with better quality looms, training in quality weaving of high value very thin material. Both activities ties in with the development of locally manufactured looms by carpenters as part of the training in Nassriayh. Furthermore, an increase in carpet and finely woven material would increase the demand for locally spun wool. According to the district and sub-district authorities responses to HAP Consultants questionnaire there is a need to support the development of carpet production.

Dairying

There is about 160,000 heads of cows and buffalos in the Thi-Qar Governorate. This is one of the major agricultural activities in the area. About 75 percent of the 60,000 rural households have cattle. Households having cattle have in average 3 to 6 heads. Milk cattle provide cash income from sale of milk products, beef and manure, and the stock represents an important asset for the families.

Many cattle farmers do not have sufficient land themselves for fodder production. Instead, land is rented from farmers growing barley in the winter period, and grass (often sprouting wild in the stubble after the barley have been grazed) in the spring. The cattle is mowed around in the province, and can be as far away as 100 km from the owners location. The cattle are tended by some of the household members, who stay in the field with the cattle. Milk is transported to the household by a rented truck, for which the household has to pay. The milk transport is organised in such way that all village members having cattle in the area share the same transport. The milk is transported in un-cooled aluminium cans of about 20 l.

The milk is processed into a soft fresh cheese with high moisture content, and a type of sweet yoghurt. The processing is carried out by very simple means. Heating the milk in shallow aluminium pans, where lactic acid and culture is added. The curd is left in aluminium pots to coagulate covered by a mesh of branches and a cloth.

The "processing" rooms are made of clay bricks, where a black layer of smoke particles from the open fires often covers the inside. Gas and wood is used to heat the milk. The sanitary conditions in the room are not considered optimal. In some cases, the milk is prepared in the same room used as kitchen and eating place for the family.

The two dairy farmers visited did express a wish to improve the milk processing methods, but they think the government should be responsible.

The table below shows the number of livestock in Thi-Qar Governorate.

Out of approx. 60,000 rural households in Thi-Qar:	**Total no. of Households**	**Percentage of Total (%)**	**Total nos. of Livestock (referred to households using land or owning livestock only)**
Households with at least one member engaged in agriculture	45000	75	
Owning Cows and Buffaloes	43800	73	157,680 Cows and Buffaloes
Owning Sheep	29400	49	467,460 Sheep
Owning Goats	13200	22	109,560 Goats
Owning Poultry	54000	90	594,000 Poultry

The average daily milk production is 4 to 5 litre in a lactation period of 200 days. The daily gain of calves is 160 to 200g per day. This low productivity results in proportionally large maintenance fodder compared to outputs. By increasing the productivity, the fodder consumption per unit of output would decrease considerably.

Traditionally, especially buffalos have been grazing on fresh reeds. The young shuts have a reasonable nutritional value; where as the older stems contain too much lignin. With the reduction of the marshes, this fodder resource is no longer available in sufficient quantity. The traditional extensive production method had its merit, because it was cheap and most of the production was used for own consumption. Today the production method has changed. Many cattle farmers have moved from the former marshes to other areas. Many do not have land; hence they have to buy fodder. Fodder is procured in mainly two ways; Hay is bought as a summer fodder, and grazing land of mainly barley is rented in winter.

Farmers claim that the lack of fodder is the main problem. This is a result of both low crop and animal productivity. The cattle population of about 150,000 requires 4 donums or 1 ha

per head. This means that practically all the 125,000 ha barley grown in the Governorate is consumed by cattle. The 3,500 ha fodder crops are neglect able compared to the demand.

Veterinarian services are scarce, and costly. Diagnosis is difficult to make due to lack of diagnostic laboratories, causing broad-spectre drugs to be used in excessive amounts, with limited effects.

The current production of milk in Thi-Qar is calculated to 150,000 t annually or 400 t per day. This gives a daily average consumption of 0.250 litre fresh milk for a population of about 1.5 Mill. Fresh milk, however, is virtually not sold, only cheese and sour milk products are produced because they can keep without a cooling chain. The value of the milk products when sold at the market is equivalent to 560ID per kg fresh milk or a total value of about 840,000,000,000ID (4.6 Mill $).
The theoretical daily expenditure per inhabitant on dairy products is about 160ID or 10US cents.

There is no dairy in Thi-Qar. Milk is locally processed into yogurt and white cheese, which is sold unpacked in local markets.

Today producers of dairy products need a sanitary authorisation from the Ministry of Health to produce and sell dairy products for consumption. This regulation however is not enforced. It might be required in the future.

HAP Consultants recommend installing a dairy processing unit in Al Shatra. This should demonstrate that there is scope for improved processing method and that it is possible to add value by improved packing, as well as showing a more rational utilization of the raw milk. The market for high value dairy products in the larger towns in Thi-Qar is limited. Today imported dairy products from neighbouring countries as well as Europe dominate the market. A local production at competitive prices could substitute part of this import and possibly increase the sale of quality products.

Fish Gutting and Cooling
The fish production in the five districts is shown in the two tables below. The survey team has collected the data presented in the first table. The second one contains data supplied by the NPC. There are large inconsistencies, which cannot be readily explained. Some of the differences might stem from differences in local consumption, drying of some of the catch, but both show a large fish production in the province.

Fish Production (Data from District surveys collected by the survey team)

District	Chibayish	Nassriayh	Al Shatra	Suq ash Shuyukh	Al Refai
Fish caught total t/year	9000	2950	1800*	1250*	-
Fish consumed by local community t/year	3000	-	800	750	
Fish for sale t/year	3000	2750	1000	500	40

(* Based on calculations made by HAP Consultants)

Fish Production (Data collected by the NPC)

District	Chibayish	Nassriayh	Al Shatra	Suq ash	Al Refai

				Shuyukh	
Fish caught total t/year	1800	-	-	1200	-

Chibayish district has the smallest population of the five districts (around 70,000 inhabitants), and land/produce most of the fish. The best quality is all exported to other areas of Iraq. Today the fish is iced and shipped fresh. Some inferior grades are dried in the summer and used as animal fodder.

The price for flake ice and transport to urban areas is estimated to 45ID/kg. A major problem for preservation of the fresh fish is the unstable electricity supply affecting the flake ice production.
The fish is not gutted by the fishermen it is iced whole and transported to the market.

Assistance has been requested for better preservation methods. Lack of electricity prevents a constant supply of flake ice. It might be beneficial to supply a generator to secure the electricity supply and hence be able to ice the fish immediately after they are brought a shore. This might also increase the price somewhat. Gutting immediately after landing should be looked into as well as improved storage and transport methods. It should however be noted that gutted fish is generally not regarded as fresh as whole ungutted fish.

Bee Keeping
There is no or only very limited beekeeping in Thi-Qar today. However, in other parts of Iraq and in many Middle Eastern countries with similar natural conditions bee keeping is well established.
Bees are not particularly choosy regarding pollen and nectar and can produce honey from a surprising range of plants even in arid regions.

Beekeeping is well suited for landless poor persons to generate a supplementary cash income and as a mean to improve food security. MOA should therefore investigate the viability of beekeeping in Thi-Qar.

Prefabricated Construction Panels from Reeds
The raw material for reeds panels is available in large quantities. The only cost involved in the supply of raw material is the cost of labour for cutting and possibly transport. A reed panel plant would generate employment in areas where there is very limited job opportunities today.

However, this project is not included in the project costs for the following reasons:

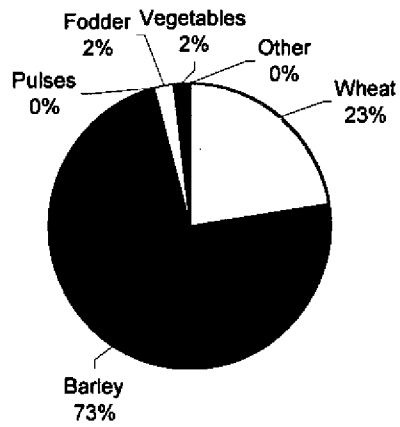
- It has not been possible to get a local technical description of the required machines: Design, capacity, consumption etc.
- It has not been possible to identify foreign manufactures producing standard machines of this kind. HAP consultants were informed though that the workshops of MOLSA training centre could produce the equipment provided they got detailed production drawings.
- The mission received conflicting information as to the existence of reed panel plants. Marsh Centre under the University of Nassriayh expressed that there are several private owned reed plants in the Chibayish area. If there are privately operated plants, the supply and demand has to be evaluated carefully in order not to disrupt the profitability of existing plants by introducing a "subsidised" plant

- There is a plant in Basrah, which have three presses but has ceased to operate apparently due to lack of raw material. This has been confirmed by the NPC. This should be investigated in more detail to find the precise reason for being out of order, and if this could be revived with the assistance of the project
- Finally, the price of panels and the demand has to be compared to other construction materials. Based on the information received from the Union of Agricultural Engineers the cost of reed panels came to the same as using traditional construction materials. Information of the durability of reed panels compared to traditional building material could not be obtained, apart from the statement received from the NPC that there is a school in operation since 1963 constructed by reed panels

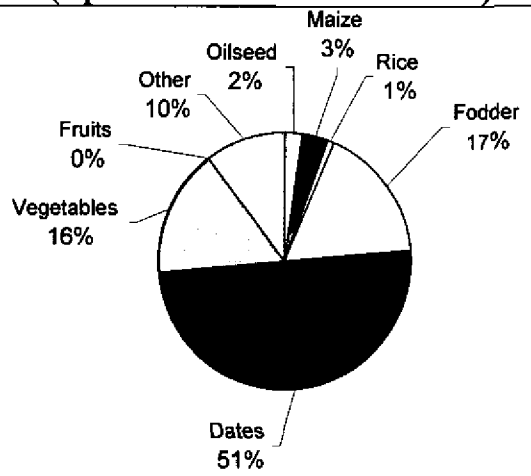
Vegetables Processing

Although the area planted with vegetables in the summer and winter is more or less the same, vegetables counts only for 2% of the winter crops and 16% of the summer crops.

Winter Crops Pattern (50 percent of available land used)



Summer Crops Pattern (6 percent of available land used)



The following table shows the production per district. The figures are indicative only since they do not add up to the totals shown by other sources.

Vegetable Production

District	Chibayish	Nassriayh	Al Shatra	Suq ash Shuyukh	Al Refai
Summer vegetables ha/year	6	800	1500	150	2300
Winter vegetables ha/year	30	420	1500	150	1040
Production Summer vegetables t/year	34	4800	6000	3900	-
Production winter vegetables t/year	70	10080	12000	1731	-
Yield in ton/ha summer *	5,5	6,0	4,0	26,0	-
Yield in ton/ha winter *	2,0	12,0	9,0	12,0	-

(* Base don calculations made by HAP Consultants)

According to the information collected by the survey teams there is about 5,000 ha summer and 4,000 ha cultivated winter vegetables. There are great discrepancies in the yields per ha. given by the survey team and those calculated by HAP Consultants. The data in the above shown table are considered reasonable in line with the situation observed in the area except for Suq ash Shuyukh. The large differences shown above are mainly due to differences in the type of vegetables produced, where tomatoes have considerable higher yields than e.g. garlic. The vegetable production increases north worth, with the largest area in the northern district of Refai. The average production per inhabitant in Thi-Qar is around 23 kg per year. For comparison, the consumption in Europe lies around 80 kg. The area planted with vegetables in 2002 was about 3,500 ha summer and winter. It therefore seams like the production of vegetables is increasing.

There is a vegetable processing unit in Al Garaf in Al Shatra district making preserved vegetables and pickles. In addition, there are individual households making pickles, marmalade and other types of preserved vegetables.

The amount of vegetables produced is not sufficient to set up a mechanised processing plant. Productivity is low. Prices for tomatoes are higher than e.g. in Basrah so there is no justification for larger processing units.

Small homemade cottage industries could however, be viable because they can be adjusted to the demand and produce quality products in the peak season to be sold in off seasons. This is not new in the area, but there is scope for improvement and expansion particularly for products produced under proper sanitary conditions. Many small producers do not fulfil even basic health requirements today. They do not have the obligatory licence from the Ministry of Health, and the products are peddled in the streets without any control. With improved production conditions, the products could enter retail shops and the demand for homemade local products increase.

Date Packing

There are very limited processing of dates in Thi-Qar. The main activities carried out by the date producers are cleaning of dates and packing in bulk. Dates are packed in 10 to15 kg baskets, on the cloves or loos in jute or other kind of bags.

Most dates are sold to traders buying the dates directly in the villages. Some producers transport the dates to nearby markets and sell both to consumers and to traders. Previously, Iraq had a large export of different kinds of dates many of which were in consumer packed. Today, most of the dates for export is bought in bulk by traders transporting them to the Golf states, where they are processed, packed and shipped.

According to information received from the district authorities the two main date producing areas in Thi-Qar are:

- Nassriayh 4,900t. per year
- Suq ash Shuyukh 19,600t. per year

The total production is calculated to around 42.000t per year after own consumption. There is production of dates in the other three districts, but the amount is much smaller.

Dates are an important agricultural product in Thi-Qar, both as part of the local diet and as a cash crop. By proper handling, storage and packing:

- Value will be added benefiting the producers
- Local employment will be generated

The selection of packing method depends on the type of dates produced and the markets, local and or export. A large variety of consumer packing exists in other countries: (Glove boxes, trays wrapped in stretch film, small plastic containers, pressed dates in plastic bags etc). Local expertise has to be consulted to find the optimal packing mix: Local availability of packing material, costs, desired image and promotion to be given to the final product etc.

The equipment to be supplied by the project is general equipment, which has general usage. All cleaning, sorting, packing is assumed to be manual.

The date packing associations can at a later stage take up production of other date products such as date juice, date paste for fillings in confectionary etc.

4.7.2 Projects not to be supported

Leather Works
Some locally produced leatherwear such as shoes and sandals has a low demand in Iraq since considerable amounts of cheap products are imported. Nevertheless, it is recommended that the ministries concerned investigate the feasibility of developing this sector, since leather wears in other Arab countries is a thriving business.

Cement Blocks
The skills needed for production of cement blocks are already available throughout southern Iraq. Simple cement block making cottage industries exists and functions satisfactorily. There is no need for project assistance.

Brick Making
There exist several brick-making factories through out the governorate and specialised skills are abundantly available. The traditional brick making uses clay cast in metal moulds and fired in a kerosene or wood kiln. The moulds and press are a simple fabricating activity. The production of clay bricks may be subject to bylaws relating to mineral extraction and burning of timber.

Construction of Wooden Boats
Construction skills are already available throughout the governorate. The main problem is the cost of quality wood. Hence, this activity will not be supported by the project.

Plastic Tunnels for Horticulture
This activity will not be supported by the project since the technology is well known, but the Cottage Industry Support Centres in Chibayish and Suq ash Shuyukh should analyse the possibilities of sale of hops in neighbouring Governorates.

Hatcheries
Hatcheries with a requested capacity by the local counterparts are problematic. There are about 70 to 80 larger poultry farms in Thi-Qar producing approximately 5,000 chickens per

production cycle of 60 days, or 6 batches per year. This would give a total requirement for day old chickens of 2,700,000 to 3 Mill per year incl. 20% mortality.

Today the poultry farmers buy the day old chickens in Baghdad for 500ID per head. The 300 to 400 km transport, in hot weather conditions affects the survival rate of the day old chickens.

A simple hatchery could possibly be built locally. It will require precision workmanship and involve different skills. A hatchery consists of:

- A stainless steel cabinet with doer
- Heating element with thermostat
- Humidifier with automatic control
- A mechanical turning mechanism of the egg trays.

In the Iraqi climate the hatchers should be placed in an air conditioned room and the fertilized eggs should be collected and kept in a cold store, before put into the Hatcher.

There are three important factors, which should exist before a centrally placed hatchery can be operating successfully:

- *Firstly, breeding farm.* A yearly production of about 3mill. chickens requires a breeding farm with 1200 layers. Today there is no breeding/layer farms in Thi-Qar Governorate
- *Secondly, planning of production.* There should be an integrated production planning of the breeding farm, the hatchery and the chicken producers. Preferably, contracts between all three parties should be set up securing all parts in the production chain.
- *Thirdly, size of hatchery.* The hatchery should have a minimum size large enough to supply all the required number of day old chickens for one farm in one delivery. Farms practicing an "all in all out" system must get all the needed day old chickens in one day. If for example the capacity of the hatchery is only half of the above. It could only supply 2,750-day-old chickens in a five-day period, which is unacceptable for the farmers.

Before the above conditions are secured it does not seam viable to start up a local production of day old chickens for commercial poultry farmers, as proposed by the local counterparts. Furthermore, a hatchery for the commercial poultry farms does not reach the target groups. It could be possible to supply/produce small simple hatchers for villages, which could supply households with day old chickens. This has however not been requested and will require a separate analysis.

Feed Mill for Nassiriyah

The main reasons for requesting a feed mill producing poultry feed to be placed in Nassiriyah are that the commercial poultry producers have to bring feed from Baghdad. The cost of transport is high and regularity of supply not always secured. Some of the main bulky fodder as:

- Barley
- Wheat
- Some yellow maize

- Date residue
- Fish waste

is produced in the Province. With limited imports from other regions of Iraq it should be possible to produce an adequate fodder for poultry and possibly other animals.

Currently, the concentration and location of the commercial poultry farmers is not known. The best placement of a feed mill should be based on a study where the transport of raw material and fodder is optimized.

Thi-Qar produces about 3 Mill Chickens per year, at a live weight of 2 to 3 kg, and a fodder consumption of 3 to 3.5 kg/kg live-weight gain the yearly requirements will be in the order of 25,000 tons per year or 70 tons per day. Distances within Thi-Qar are not so large that two smaller mills would be feasible. The costs of a mill with a capacity of 70 tons per day could be in the order of 120 - 140,000 USD using imported equipment.
The price of a locally produced one is not known, but mils are produced in Baghdad today.

Even though it is currently not known if a feed mill could be financially viable, it is not recommended to support such a project for the following main reasons:

- It does not involve the target groups
- It will create few new jobs (15 to 20) and the investments per job will be very high.
- To operate continuously it should be supplied with own generator due to lack of constant el supply. This could double the investment costs.
- It has no or little spin of effect on the cottage industries

Tomato Paste Production
It is not recommended to start up a tomato processing unit in Thi-Qar chiefly because the tomato production is too small and prices too high. This was discussed with the director of agriculture for Thi-Qar governorate who agreed with this assessment.

The following presents a brief description of preliminary project identification for a tomato processing plant. In case the southern part of Iraq should have a tomato processing plant it should be placed in Basrah having the best natural conditions and hence the largest production of tomatoes in the southern region. Thi-Qar has much more dry and cold climate conditions in the season which adversely influence the yield.

The conclusion is, however, that at this point in time it is also not viable to set up a processing plant in Basra mainly because the yields are too low.

Yields are around 10 to 15 tons per ha and the quality is not stable the main reasons are:

- Lack of use of seedlings
- Use of old varieties, and propagation of own seeds
- Less than optimal and unbalanced use of inputs
- No systematic preventive disease programmes (systematic spraying)
- Irrigation pipes are: leaking, not levelled, drippers clocked, causing uneven pressure in the system resulting in uneven amounts of water to the individual plants.

- Lack of use of early and late maturing varieties, which could increase the yield and even out the production over the season

Up to the last season, the tomato farmers faced several problems:

- Input prices have increased much more rapidly than output prices.
- Lack of seasonal credit facilities
- Some inputs have not been available in sufficient quantity, or too expensive for the farmers to buy (pesticides, fertilizer, plastic cover for tunnels), resulting in more diseases, lower quality and production
- The private sector is still not sufficiently established and competitive enough to supply all
- Required inputs.
- No outlet for small and 2nd quality tomatoes to the canning factory in Kabala this year. This result in further depressed market prices because larger quantities of inferior quality reach the consumer market particularly in the Basrah area.
- No storage at the central tomato market, coursing the farmers to sell the tomatoes the same day they are brought to the market.
- Mobile telephones out of operation, which prevented many farmers to enquire about the market fluctuations and plan accordingly.

Some of these problems have for the season 2004/2005 improved. Output prices have increased and input prices have stagnated. The better farmers have been able to get access to seasonal credit; they start to use seedlings and better varieties. Mobile telephones work better although frequently out of service.

The cost of tomato paste on the world market is low and competition is high. A profitable operation of a tomato processing plant needs a steady supply of good quality high yielding tomatoes at very low prices. Once the production techniques are under control, the national seasonal demand for consumption tomatoes satisfied and the import-export of tomato products regulated, it could be feasible to set up a tomato processing plant.

Knitting

Knitwear is imported and has a limited use in the urban areas in the cold winter period. Knitwear is not used in the rural areas. It does not have the same widespread usage as other types of cloth. In April, knitwear was not found in the market, but when it is there, it is all imported from China and Taiwan. In case knitwear should be produced, it should probably be exported to other areas in the north, where it is widely used. Design and quality must be studied in debt to match the demand in these areas. Should it for example be thick hand spun and knitted types, or lighter finely spun machine knitted types? The current production in these areas must likewise be studied.

There is no commercial knitting today in the Thi-Qar Governorate. The demand is small and possible products would have to be marketed elsewhere in the country. It is doubtful if local wool can be spun finely and uniformly enough to be used for commercial knitting production. Finally, the equipment is costly and requires electricity, which is not readily available in the villages.

Based on abovementioned factors it is not recommended to support this activity.

5. THE PROJECT

5.1 Methodology for Needs Assessment

The planned methodology used for the needs assessment was a three-fold approach, consisting of: Firstly a survey using questionnaires, secondly a simple feasibility analysis of promising interventions and thirdly an analysis of the raw material and service availability in the Thi-Qar Governorate. The planned approach had to be radically adjusted to the actual situation due to a number of factors: Lack of data and information prior to the field mission, lack of data during the field trip, the security situation preventing the consultants to visit a sufficient number of potential beneficiaries, institutions and to coach the enumerators. A more detailed account of the execution of the field mission is shown in Annex 7.

5.2 Concept of the Project

The immediate key objectives stipulated in the project document calls for:

- Introducing vulnerable households to appropriate and sustainable small scale income generating activities
- Upgrading the skills base of the existing households currently undertaking cottage activities in the project areas
- Establishing cottage activity associations
- Establishing cottage industry facility centres to act as project focal points

The upgrading of skills is proposed to be broader than mentioned in the project document by including training of persons in different crafts needed in the urban micro enterprises and not concentrate only on existing cottage industries. This is proposed because there is a demand for persons with such skills.

In conformity with the project outline, it is proposed to establish producers associations at the community level, grouping a number of producers of the same product together in at cooperative type association. The association can them selves, or together with other associations establish Cottage Industry Facility Centres (CIFC) in central places convenient for marketing of the associations products and possibly purchase of inputs. These centres will have 3 main functions:

- To be a focal point for the beneficiaries where they can get inspiration and assistance to improve the production.
- To be a window to the outside community displaying and promoting the products of the associations.
- To provide services to the beneficiaries/associations for supply of inputs, training, administrative support etc.

All foreign and local costs for equipment training and other activities under the project in year 1 will be paid by the project. Costs for year 2 and 3 will be paid by the local authorities.
To reach a sufficient number of beneficiaries it is preferable to continue the training activities for a total of 2 to 3 years. To foster and to encourage an entrepreneurial attitude amongst the poorer segments of the population takes time and requires a sustained effort. It is not believed that this task can be completed within the projects lifespan of one year. Refresher courses and

similar support should be provided by the ministries involved, the ministries should therefore include finance for these activities in their annual budgets for year 2 and 3.

5.3 Criteria for Beneficiary Selection

Three types of beneficiaries have been identified:

1) Firstly for the traditional female crafts, the poor disadvantaged preferably IDP and heads of women households in the 3 districts holding the largest concentration of IDP's: Nassriyah, Suq ash Shuyukh and Chibayish should be identified. It is HAP Consultants view that the cooperation of some resourceful NGOs should be thought for this purpose.

2) Secondly craftsmen to be trained in various skills should be selected from those already having some practical and possibly vocational training. There is a large number available in Thi-Qar.

3) Thirdly some of the proposed projects will require the formation of associations for which persons with managerial skills must be found. It will not be possible for inexperienced persons to undertake such a production.

The criteria for selecting the beneficiaries should include the following:

Craftsmen: Mechanics, blacksmiths, carpenters etc:

- Living within the targeted communities
- Some initial knowledge in the relevant field
- Willingness to join an association of craftsmen

Beneficiaries receiving small-scale productive equipment: sowing machines, looms, food processing machines etc. should:

- Be identified as member of a poor households and or IDP and or returnees in the targeted project areas
- Willingness to work in co-operation with other beneficiaries and join an association
- Willingness to attend relevant training courses
- Not having benefited recently from similar programmes

Beneficiaries to receive larger food-processing equipment:

- Willingness to share a set of equipment with other persons
- Willingness to attend training courses and actively participate in project activities
- Willingness to join an (cooperative) association

5.4 Local Organisation of the Project

The following section gives an overview of the proposed project organisation at local level. Annex 2 shows the recommended activities at district and sub-district level.

MOA and MOLSA
The two ministries will be responsible for setting up and operating the main training centres in Nassiryah and Al Qorna. The staff being trained by the project will provide support to individuals and associations. The costs of training and operation of the centres for the first year shall be pied by the project, but MOA and MOLSA should include operation costs of the centres in their budgets for the following year.

MOLSA Training Centre in Nassriyah
This training centre will be the main training centre for skill development and practical training in wood, metal, mechanic and other crafts. As part of the training, it will produce some of the implements and equipment to be used by the beneficiaries. It will be supplied with equipment, machines and some consumables as well as the direct cost of operation for the first year by the project.

MOA training centre in Al Qorna
The regional MOA training centre in Al Qorna will be used for training in food technology. It will be supplied with equipment, machines and some consumables as well as the direct cost of operation for the first year by the project.

Further more a fully equipped processing plant for juice and vegetable products exists at the Agricultural faculty at Basrah University. This could be used in the future for training and experimental purposes should the demand arise for the introduction of larger mechanised processing plants. The Dean of the agricultural university assured the mission that they would be interested in such collaboration.

Dairy Centre in Al Shatra
A dairy processing centre in Al Shatra will be provided as a demonstration plant run by the dairy association in the area. The processing facility can be used for skill development and practical training in dairy processing.

Al Shatra has been chosen because of its many dairy farmers, which makes the location especially suited for dissemination of dairy processing techniques. The centre will be furnished with key dairy processing equipment. It is recommended that general dairy equipment (milk tanks, yoghurt fermentation tanks etc.) be produced as part of the training in metal works in Nassriyah.

NGOs
It will not be possible for one or a few persons to cover all required activities of the CIFC. The existing extension officers at district and sub-district level do not have sufficient contact with many of the potential beneficiaries. It is therefore recommended that part of the activities be channelled to NGOs with contacts to the target groups of the project. The NGOs could be engaged in the identification of beneficiaries, some of the training e.g. sowing, spinning etc. NGOs could also play an important role in keeping the contact with the beneficiaries and monitor the progress. In this way the NGO can screen the beneficiaries, so the centre personnel can concentrate on assisting the once in need.

Selection of NGOs should be carefully considered, so that only those having contact to the specific beneficiaries targeted by the project will be addressed.

A major obstacle for most NGOs is the lack of funds. It is proposed to include provisions in the project budget for services provided by NGOs. This could be in form of material supplied, office machines and/or cash.

Agricultural Bank

It is the view of the Consultants that the beneficiaries need for operating capital should be bank financed. It is recommended that allowances are made by the project to provide funds for most of the consumables for the training.

MOA and MOLSA should reach an agreement with the agricultural bank to provide credit to the beneficiaries for investments and operating capital and terms for administration of the revolving funds of the CIFC. The agricultural bank should prepare a set of simple application forms and guidelines to be used by the beneficiaries when applying for credit. Beneficiaries getting tools and equipment under the project should repay the loan part to the Agricultural Bank. The bank will then against a service fee transfer the repayment to the revolving fund account of the CIFC.

5.5 Number of Beneficiaries and Project Costs

Data and information has been perfected by an increased local project staff since the consultants' field mission took place. The project activities have as a result of this been modified somewhat compared to the consultant's original suggestions. Decisions taken by the management have not in all cases been detailed to a degree where the consultants could produce repayable cost estimates. This is particularly the case for the food technology training centre in Al Gorna. The following 2 tables show the number of trainees and associations to be established for food and non-food activities.

Trainee and Association Number for non food technologies

	Trainees in Year 1	Successful Graduates in Year 1	Number of Associations
Welding/metal work	80	65	1
Agricultural mechanics	80	65	1
Blacksmiths	60	50	6
Woodworkers	80	65	1
Sewing/garment making	100	80	1
Spinning	60	50	1
Weaving/carpet making	60	50	1

* Each association will have 10 to 20 members

Trainee and Association Number for food processing

Activity	Trainees			Beneficiaries index	association	Total of beneficiaries
Dairy processing	120	15*8	100	80	2 (20)	100
Fruit juice & Jam	80	10*8	75	55	2 (20)	75
Vegetables processing	50	10*5	40	30	1 (10)	40
Date processing	80	10*8	70	50	2 (20)	70
Cereals	80	10*8	70	50	2 (20)	70
Fish	30	15*2	20	TBD	2 (20)	20

A summary of the persons to be trained, Nos of associations and value of equipment to be distributed.

Type of Beneficiaries	Trainees In year 1	Successful Graduates In year 1	Total nos. persons graduating 3 years	Number of Associations*	Nos. beneficiaries receiving equip.	Cost per beneficiary	Total value of tools & equip. distributed to beneficiaries
Woodworkers	80	65	195	1	65	400	26.000
Agr.Mechanics	80	65	195	1	65	400	26.000
Welders	80	65	195	1	65	400	26.000
Blacksmith	60	50	150	6	50	400	20.000
Sowing	100	80	240	1	80	100	8.000
Spinning	60	50	150	1	50	200	10.000
Weaving/carpets	60	50	150	1	50	1030	51500
Total	**520**	**425**	**1275**	**12**	**425**	**2930**	**167.500**

* Each association will have 10 to 20 members.

Trainee and association number for food processing

Type of beneficiaries	Trainees In year 1	Successful Graduates In year 1	Total nos. persons graduating 3 years	Number of Associations*	Nos. beneficiaries receiving equip.	Cost per beneficiary	Total value of tools & equip. distributed to beneficiaries**
Dairy Process.	120	100	300	2	100	50	5000
Fruit juice and jam	80	75	225	2	75		
Vegetable process.	50	40	120	1	40		
Date process.	80	70	210	2	70		
Cereals	80	70	210	2	70	100	8.000
Fish	30	20	40	2	20	200	10.000
Total	**440**	**375**	**1275**	**12**			

*Each association will have 10 to 20 members.

** Costs of equipment and training will have to be prepared by the project management.

Description of the costs is given for each project in Annex 4.

Costs of the reeds pressing project is not included in the above, because without a separate feasibility study there are too many conflicting information for the consultants to recommend the project.

Type of Beneficiaries	Total Project costs Year 1	Project costs		Government costs			Total Projectl costs
		Total foreign Cost	Local costs year 1	Local costs year 2	Local costs year 3	Local costs 2/3 years	
Carpentors	146940	107940	39000	39000	39000	78000	224940
Mechanics	141640	102640	39000	39000	39000	78000	219640
Welders	98000	59000	39000	39000	39000	78000	176000
Blacksmith	104000	48500	55500	50500	50500	101000	205000
Sowing	27150	17000	10150	10150	10150	20300	47450
Spinning	26100	19900	6200	6200	6200	12400	38500
Weaving	85700	74450	11250	11250		11250	96950
subtotal	**629530**	**429430**	**200100**	**195100**	**183850**	**378950**	**1008480**
Dairy	444750	286500	158250	11250	11250	22500	467250
Fish	34700	24700	10000	10000		10000	44700
Bee keeping*	84400	73100	11300	11300		11300	95700
Vegetables	15700	6400	9300	9300		9300	25000
Dates	24300	15000	9300	9300	9300	18600	42900
subtotal	**603850**	**405700**	**198150**	**51150**	**20550**	**71700**	**675550**
Total	**1233380**	**981930**	**466700**	**225700**	**193850**	**45050**	**1684030**

*MOA study if bee keeping can be a viable activity in Thi Qar.
The viability of Reed panels and production of reed furniture are being studied. The costs are not included above.

The total project cost is 1,7Mio USD. Of this, the project covers 1.25Mio USD for equipment, training and other activities in year 1.
The costs of operating the project in year two and three comes to about 450,000 USD which should be covered by the provincial government.

6. RECOMMENDATIONS

The following activities are recommended to be supported by the project. See Annex 3 for a detailed description of each cottage industry.

6.1 Carpentry/Joinery, Wood Working

There is a need for skill and quality control improvement. Carpenters can with training produce part of the tools and implements to be used by especially the female beneficiaries. The activity is financially viable.

6.2 Motor Mechanic/Tractor Mechanic

It is recommended to support this cottage industry because:

- The mechanics lack specialised skills
- Lack of quality craftsman ship
- Lack of quality control
- There is a virtually total lack of "mechanics/electricians" who can handle electronic and hydraulic control mechanisms in modern tractors and combines
- Lack of equipment and suitable workshops with sufficient gear to safely dismantle a tractor or combine for repair
- An acute lack of spare parts

The activity is financially viable and the financial benefits are larger than the costs.

6.3 Welding/Fabricating, General Metal Works

Justification for Supporting Welding/Fabrication, General Metal Works
There is a need for improved welding techniques and finishing. To facilitate the development of small-scale agro-processing industries it will be advantageous to be able to produce small equipment locally. The activity is considered financially viable.

6.4 Blacksmithing

Justification for Supporting the Project
Existing Iraqi made and imported tools are crude and not of good quality. There is scope for improvement regarding design, durability and costs.

Very little if any forged parts for agricultural machines are produced in Thi-Qar to day. There is a need for production of e.g. plough shears etc. particularly because no spare-parts are available or difficult to obtain.

The activity is financially viable.

6.5 Sewing/Garment Making

The activity is well suited for the targeted poorer segments of the population. The number of women who could benefit is considerable. It will generate employment, and contribute to raise the awareness of needed entrepreneurial activities. The activity is financially viable.

6.6 Spinning

By washing, carting, spinning, and using the spun wool for e.g. carpets and finer woven cloth value can be added locally and employment generated. There could be a direct link between this intervention and the development of a local production of spinning and carting machines. The activity is financially viable.

6.7 Carpet making and weaving

There is scope for improving the quality of carpets. Particularly by introducing better natural dies. Improved looms should be introduced to both rural and urban beneficiaries for the production of fine woven cloth for e.g. "Abayas" which have a market locally and could be exported.

There is a direct link between this activity and the development of locally manufactured looms to be taught to carpenters as part of the training in Nassriyah. Carpet production is frequently mentioned by the district and sub-district authorities in their responses to the questionnaire as projects to be supported.

6.8 Dairy Processing

The production of milk in the Governorate is estimated to 400 tons daily. Of this, a large proportion is produced in Al Shatra. It is processed into soft white cheese and yoghurt in a traditional way lacking proper hygiene and having short shelf life. There is scope for improving the processing method and to add value by improved packing and a better utilization of the raw milk. There is a market, though limited, for high value dairy products in the larger towns in Thi-Qar. Imported dairy products from neighbouring countries as well as Europe were found in Nassriyah. A local production at competitive prices could substitute part of this import.

The activity is financially viable.

6.9 Date Processing

There is a scope for consumer packing of dates for the urban markets in Iraq and possibly for export. Small cleaning, storage fumigation and packing units should be introduced. It is recommended that 8 such units be established in the main date producing areas. It is recommended that a specialist be engaged by the project to outline the type of consumer packing to be chosen for different markets, and to identify locally available packing material.

6.10 Fish Gutting and Cooling/Freezing Plant

The main reasons for supporting this project are:

- To improve prices in the peak season by taking fish out of the market by storage and processing of fish.
- To improve out of season supply to neighbouring Governorates at higher prices.
- To create local employment
- To improve the income and living conditions of the fishermen in the area; which in turn could improve fishing methods and decrease over fishing.

6.11 Bee Keeping

Beekeeping is well suited for landless poor persons to generate a supplementary cash income and as a mean to improve food security.

It is recommended that FAO be consulted regarding the suitability of climate and vegetation in Thi-Qar before a final decision is made to include this activity in the project. There is a successful bee keeping project in Basra governorate. MOA will study the viability of beekeeping in Thi Qar.

6.12 Prefabricated Construction Panels from Reeds

Justification for Supporting Prefabricated Construction Panels from Reeds
The raw material for reeds panels is available in large quantities. The only cost involved in the supply of raw material is the cost of labour for cutting. A reed panel plant would generate employment in areas where there is very limited job opportunities to day.

The information received by the consultants are, however, not sufficient to evaluate the financial viability of such a plant. It is recommended that a local consultant carry out a feasibility study before it is finally decided to include this project in the project.

6.13 Vegetable Processing

Cottage industrial processing of vegetables in various forms has a market in the region. Small flexible units can adjust to the demand and produce quality products in the peak season to be sold in off seasons. This is not new in the area, but there is scope for improvement and expansion particularly for products produced under proper sanitary conditions.

7. CONSLUSION

There is a need for the cottage industry project, which can be operational within a short delay to create employment, curtail poverty amongst a sizable part of the population and hence contribute to increased stability in the region.

A number of viable interventions have been identified as described in chapter 6. It is however felt that the period of one year is too short to install a sense of ownership, and to encourage a desired entrepreneurial attitude amongst particularity the poor and disadvantaged target groups. It is there for recommended to prolong the duration of the local project activities with an additional one to two years.

It is felt that time is a serious constraint. The project envisages unwinding its activities in about 12 months. This is a very short time frame for involving beneficiaries at the grass root level to form associations and to set up cottage industry facility centres and take ownership of such organisations.

ANNEX 1
LIST OF PERSONS MET

Date	Name	Position	Organization
12/4-2005	Mrs. Inger Agger	Social Development Advisor	Dfid
12/4-2005	Dr. Enrico Bellina	n/a	Cooperazione Italiana
13/4-2005	Mr. Baseel Talib Al-Furati	Manager Assistant	Directorate of Agriculture
13/4-2005	Mr. Faroug Abdul Asis Taha	Manager of Agriculture & Extension	Centre for Saithu Governorate
13/4-2005	Mr. Abdul-Hussine Salih Najim	Director	Directorate of Agriculture, Thi-Qar Governorate
13/4-2005	Mr. Yussur Hammod	National Project Coordinator, Promotion of Cottage Industry Development Project	UNIDO
14/4-2005	Mr. Abdul Hady Ajeel	Manager of Training Centre	Ministry of Labour and Social Affairs
14/4-2005	Resan Abad Al Wahab	n/a	Ministry of Planning
14/4-2005	Mr. Abbas Daond Shati	n/a	Ministry of Planning
14/4-2005	Dr. Salim Hussein Mohammad	Director	Marshes Research Centre (University of Nassiriyah)
14/4-2005	Dr. Talib Eghap Hussein	Assistant Director	Marshes Research Centre (University of Nasiriyah)
14/4-2005	Mr. Tawfig Awad Kadhim	Managing Engineer	Ashor State Owned Construction Company (Directorate of Housing and Construction)
14/4-2005	Mr. Ali Hassan	Planning Manager	Ur State Owned Cable Company (Directorate of Industry)
14/4-2005	Mr. Adil Khdier	Project Manager	Ur State Owned Cable Company (Directorate of Industry)
15/4-2005	Mrs. Fordos Tarish	Secretary	The Union of Iraqi Women
15/4-2005	Mr. Abdul Ameer Ressan	Assistant Director	The Union of Iraqi Farmers, Nassiriyah
15/4-2005	Mr. Mohammed Abbas Nasler	Chief Agricultural Engineer in Thi-Qar	The Union of Iraqi Farmers, Nassiriyah
15/4-2005	Mr. Ali Hussein Raddad	Agricultural Engineer – Arab Marshes in Thi-Qar	The Union of Iraqi Farmers, Nassiriyah
15/4-2005	Yusif Abdul Kadim Falih	n/a	The General Union of Farmers Society Iraq, Suq Ash Shuyukh
15/4-2005	Mr. Saad Adnan Joda	Owner	Individual farmer in Suq Ash Shuyukh
17/4-2005	n/a	Owner	Repair Workshop for Irrigation Pumps in Nassiriyah
17/4-2005	n/a	Owner	Spare-parts Supplier in Nassiriyah
17/4-2005	n/a	Owner	Metal Workshop in Nassiriyah
17/4-2005	n/a	Owner	Metal Workshop in Nassiriyah

Date	Name	Position	Organization
17/4-2005	n/a	Owner	Small Generator Workshop in Nassiriyah
17/4-2005	n/a	Owner	Electrical Workshop in Nassiriyah
17/4-2005	n/a	Owner	Tile Trading Company in Nassiriyah
17/4-2005	n/a	Owner	Tile and Cement Trading Company in Nassiriyah
17/4-2005	n/a	Owner	Bakery Shop in Nassiriyah
17/4-2005	Mr. Mutashar Jabour	Dairy Farmer	Cheese and Yogurt Processing in Al Zohor Village, Shatra
17/4-2005	n/a	Dairy Farmer	Cheese and Yogurt Processing in Al Zohor Village, Shatra
17/4-2005	Mr. Jassim Mohammad Saleh	Owner	Butcher in Nassiriyah
17/4-2005	n/a	Owner	Metal Sheet Workshop in Nassiriyah
18/4-2005	n/a	Owner	Tractor Repair Workshop in Nassiriyah
18/4-2005	n/a	Owner	Furniture Shop
18/4-2005	n/a	Owner	Agricultural Tools and Implements Shop
18/4-2005	n/a	Owner	Carpentry in Nassiriyah
19/4-2005	Fauzin Juad Kalim	Responsible Nasseriayh Office	Islamic women Union (NGO)
19/4-2005	Nadia Abdelmahde	Responsible Nasseriayh Office	Islamic women Union (NGO)
19/4-2005	Husmi Karim Hadi	Manager, Nasseriayh	Chamber of Commerce
19/4-2005	Nassir Abed	Chief Engineer	Agricultural supply Company
23/4-2005	Dr. Gheyath H. Majeed	Dean of Collage of Agriculture	University of Basrah
23/4-2005	Yvon A. Resplandy	Institutional Specialist	U.S. Agency for International development
24/4-2005	Ole Stockholm Jepsen	Senior Advisor; Food, Agriculture and Irrigation	Danish Office Basrah

ANNEX 2

PROJECT COST ESTIMATES

Total project cost breakdown

Activity	Persons trained	Persons establish business	Add. emp-loyment	Total bene ficiar ies	Persons trained no business	Nos beneficiaries receiving equip.	Cost per beneficiary	Total cost tools etc. distributed	Total costs	Total foreign Cost	Local costs year 1	Local costs year 2	Local costs year 3	Total local costs
Carpenters	360	180	180	360	180				233940	81940	50500	50500	50500	151500
Mechanics	360	72	144	216	288				228640	76640	50500	50500	50500	151500
Welders	360	108	108	216	252				181600	33000	50500	50500	50500	151500
Blacksmith	360	108	108	216	252				185000	28500	50500	50500	50500	151500
subtotal	**1440**	**468**	**540**	**1008**	**972**				**829180**	**220080**	**202000**	**202000**	**202000**	**606000**
Sowing	600	250	250	500	350	250	100	25000	62400	34000	12800	12800	12800	38400
Spinning	480	200		200	280	200	200	40000	68500	49900	6200	6200	6200	18600
Weaving	360	180		180	180	50	1030	51500	107950	74450	16500	16500	16500	49500
Bees	400	200		200	200	200	325	65000	94200	71600	11300	11300		22600
Vegetable	400	200		200	200	200	100	20000	47000	22400	12300	12300		24600
Date packing	40	240	40	280		240	191	45800	45800	15000	30800			30800
subtotal	**2280**	**1270**	**290**	**1560**	**1210**	**1140**	**1946**	**247300**	**425850**	**267350**	**89900**	**59100**	**35500**	**184500**
Dairy	20	500		520		500	857	428500	428500	286500	142000			142000
Fish	10	125		135		135	970	131000	131000	68000	63000			63000
subtotal	30	625	0	655				559500	559500	354500	205000	0	0	205000
Total	**3750**	**2363**	**830**	**3223**		**1775**		**806800**	**1814530**	**841930**	**496900**	**261100**	**237500**	**995500**

Total Costs of Training Centre in Nassriayh

Activity	Foreign costs			Local costs									Total 1 year	Total 3 years*
	Tools equipment	Consumables	Consumables Dairy	Installation	Consumables	Instructors	General operating costs	Board	Training material	Overhead	Investment	NGO	year	years *
Carpenters	71940	10000		500	12000	5000	6000	18000	6000	3500			132940	234940
Mechanics	76640			500	12000	5000	6000	18000	6000	3500			127640	229640
Welders	12000	10000	11000	500	12000	5000	6000	18000	6000	3500			84000	186000
Blacksmith	22500	6000		500	12000	5000	6000	18000	6000	3500	5000		84500	196500
subtotal	**183080**	**26000**	**11000**	**2000**	**48000**	**20000**	**24000**	**72000**	**24000**	**14000**			**424080**	**832080**
Sowing													0	0
Spinning													0	0
Weaving	3075												3075	3075
subtotal	**4575**	**3000**											**7575**	**7575**
Total	**187655**	**29000**	**11000**	**2000**	**48000**	**20000**	**24000**	**72000**	**24000**	**14000**	**0**	**0**	**431655**	**839655**

Total Costs of Training Centre in Al Qourna

Activities and other input shall be specified after the first training program.

Activity	Foreign costs			Local costs								Total 1 year	Total 3 years*
	Tools equipment	Consu mables	Consu mables Dairy	Installation	Consu mables	Instructors	General operating costs	Board	Training material	Overhead	Invest ment	NGO	year	years *
subtotal														
Total														

Estimated Cost Breakdown for the Cottage Industry Facility Centres

	Foreign costs			Local costs 1 year									Total 1	Total 3
Activity	Tools equipment	Consumables	Consumables Dairy	Installation	Consumables	Instructors	General Operating costs	Board	Training material	Overhead	Investment	NGO	year	years *
Sowing	4000				5000				300	5000		2500	16800	424(
Spinning	9300	600			1000				200	3000		2000	16100	285(
Weaving	14375				10000				500	4000		2000	30875	6387
Bees	5500				5000				300	4000		2000	16800	281(
Vegetable	2000				6000				300	4000		2000	14300	266(
Date									300			2500	2800	28(
Date specialist												4000	4000	40(
Dairy						2500			500	2000		5000	10000	100(
Fish						2500			500	2000		5000	10000	100(
Total	**35175**	**600**	**0**	**0**	**27000**	**5000**	**0**	**0**	**2900**	**24000**	**0**	**27000**	**121675**	**20817**

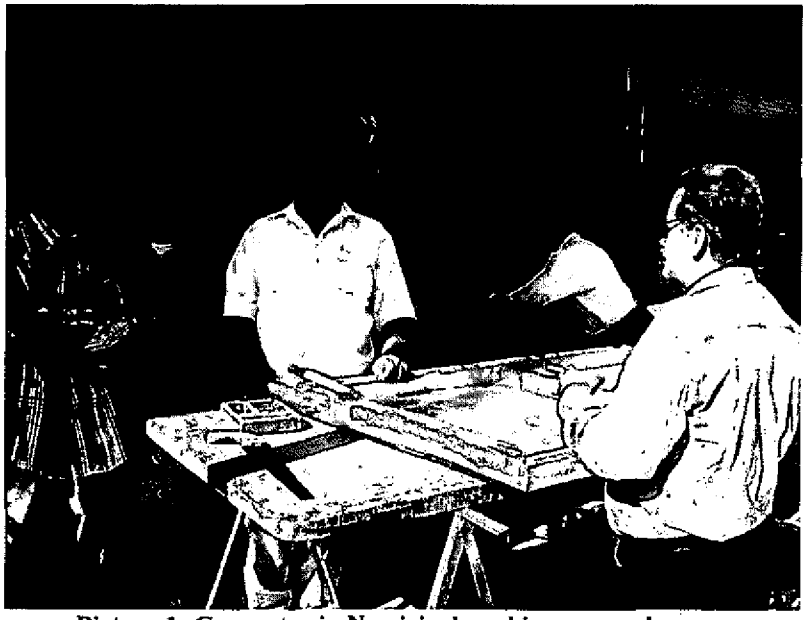
* Bees and vegetable training at the district centres are planned to run for 2 years only. Dairy, fish and Dates are 1 year assistance only in connection with the establishment of these units.

ANNEX 3

COTTAGE INDUSTRY PROJECTS TO BE SUPPORTED

3.1 Carpentry/Joinery, Wood Working

A large number of carpentry/joinery and wood workshops exist in Thi-Qar. It is difficult to distinguish between the categories. Most however, make repairs, simple furniture such as cupboards, beds etc, doors and windows. A common feature is the rather poor workmanship caused amongst others by lack of or use of old worn down machines and tools.



Picture 1- Carpenter in Nassiriyah making a gravel screen

It is estimated, that there are about a hundred wood workshops in Nassriayh alone, and probably some 650 in all of Thi-Qar.

There is a thriving business in sale of second hand furniture, most of which is imported from neighbouring countries.

Justification for Supporting Carpentry/Joinery and Woodworking
There is a need for skill development and quality control improvement. Furthermore Carpenters who undergo training can produce part of the tools and implements to be used by the project e.g. spinning machines.

Beneficiaries

- IDP with some appropriate background knowledge and practical skills motivated to go into a new profession
- Employs of wood workshops, who has some practical experience in woodworking
- Young persons who has had a vocational technical training, currently unemployed
- Former military personnel with a technical background and practical skills

Location of beneficiaries
Beneficiaries should be selected from all 5 districts.

Training
The training will take place at the MOLSA centre in Nassiriayh.
This is not a vocational training course. The beneficiaries should therefore have some basic skills in calculation, arithmetic etc to enable them to design, cut and join wood.

The beneficiaries should receive basic training in quality woodwork, repair, crafting and finishing of wood as well as specific topics relevant for some of the other activities of the project:

- Repair of furniture.
- Polishing and finishing etc.
- Production of looms
- Production of spinning wheals
- Production of bee hives
- Production of shafts for hand tools

The production of the wooden implements at the training centre will be part of the training, and the effects will subsequently be distributed to other beneficiaries under the project.

Cottage Industry Facility Centres
All relevant cottage industry facility centres in the five districts could assist the graduates to establish wood workshops and to sell the products.

Project Inputs
- Training of carpenters
- Tool boxes with basic carpentry equipment (to be specified)
- Quality wood for making looms, spinning wheels and shafts for agricultural tools etc.
- Two sets of machine and hand tools as specified in PF report
- Two sets of examples of wooden looms, spinning wheals, bee hives etc.

Project Costs

Foreign (project) costs:

• Tools for woodwork training	51,560 USD
• Tool boxes for beneficiaries trained first year	32,000 USD
• Quality wood (estimate)	10,000 USD
• Spinning equipment	10.880 USD
• Looms (estimate)	6.000 USD
• Beehives (if accepted; estimates)	2,500 USD
• Shafts for agricultural tools and implements	1,000 USD
Total foreign costs:	*113,940 USD*

Local (estimated project) costs for 1 year:

• Installation of equipment and machines	500 USD
•	
• Consumable material for the training courses	8,000 USD
• Salaries for instructors (3)	5,000 USD
• General operating costs of the training facilities	6,000 USD

• Board and lodging for trainees who can not commute to the centre every day (3$/day)	12,000 USD
• Training material: manuals, drawings etc.	4,000 USD
• Contribution to overhead costs for the total centre	3,500 USD
Total local costs:	*39,000 USD*
Local (estimated project) costs for 3 year:	117,000 USD
Total Project costs (3 years):	**230,940 USD**
Total costs to be born by the project in year 1	***152.940USD***

Total Financial Project Benefits (3 years):

The total financial benefits for 195 persons over a period of 3 years will be:

Year 1	50% of 65 persons of	1,200,000ID	39,000,000ID
Year 2	65+(50%of 65)	1,200,000ID	117,000,000ID
Year 3	130+(50%of65)	1,200,000ID	195,000,000ID
Total financial benefits over 3 years:			351,000,000ID
Equavalent to 234,000USD			

The financial benefits outweigh the financial costs for the 3 year period. In case a 10 year Period had been used the benefits would be significantly larger.

Assumptions:

- 20 persons per class (training course)
- 4 courses per year
- Training is run for 3 years
- Toolboxes is only included in the budget for year 1. The lack of free distribution of tools is not influencing the graduate chances of getting employment in existing workshops
- Total number of beneficiaries is 240 persons
- 195 of the trained beneficiaries graduate and establish themselves with own workshops or gets employment in an existing workshops
- The 195 beneficiaries generate a net financial income of at least 50% of the minimum government salary of 200,000ID/month

Evaluation of the Risks:

1) The assumed incomes will not be reached
   This is not very likely to be the case. The Consultants was informed that a workshop with 3 workers specialised in making complete sets of bedroom furniture could make 12 sets a year. The price of each was 700USD. With a margin of 30%, the return to labour would be about 4Mill ID. This is about the same as used in the benefit calculation above. However it should be assumed that the quality and hence the price would improve after having received training
2) The market will not be able to absorb a maximum of 195 new shops in the province over the next 3 years.

The current increase in particularly the building industry seams to justify an estimated increase of woodwork shops of 25% as used above

Recommendations

It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that the training and support to persons in the woodworking industry should be included in the project.

3.2 Motor Mechanic/Tractor Mechanic

Background

The distribution of repair shops in the governorate is uneven, and in many cases there are more that 30km to a basic workshop, which can only make very simple repairs. HAP Consultants did see many mechanical workshops in Nassriayh, Suq ash Shuyukh and Al Shatra. Many of the larger once dealt mostly with repair of automobiles. In the centre of Nassriayh there were an estimated 30 to 40 small specialised workshops poorly equipped with few outdated machines and very little hand tools. They are specialised in repairing one type of machines: e.g. water pumps, small electrical generators, rewinding electrical motors etc. Some have one machine e.g. a lathe where the adjustment mechanisms are so worn that the product will not come out even.

There are no larger mechanical workshops for tractors and combines. More complicated repairs e.g. hydraulics, electronic control mechanisms etc has to carried out in Baghdad. HAP Consultants did not see or hear about any workshop equipped with lifting gear, cranes etc. where a tractor could be dismantled for repair.

Existing workshops with some specialised skills in agricultural machines repair in the main districts are:

1.	Chibayish	2 to 3
2.	Nassriayh	8 to 9
3.	Refai	10 to 12
4.	Shatra	10 to 12
5.	Suq ash Shuyukh	3 to 5

It was reported that the mechanics capable of carrying out repairs that are more complicated have left Thi-Qar for better jobs elsewhere.

It is felt there is a sufficient number of self taught mechanics in Thi-Qar most, however, lack specialised skills.

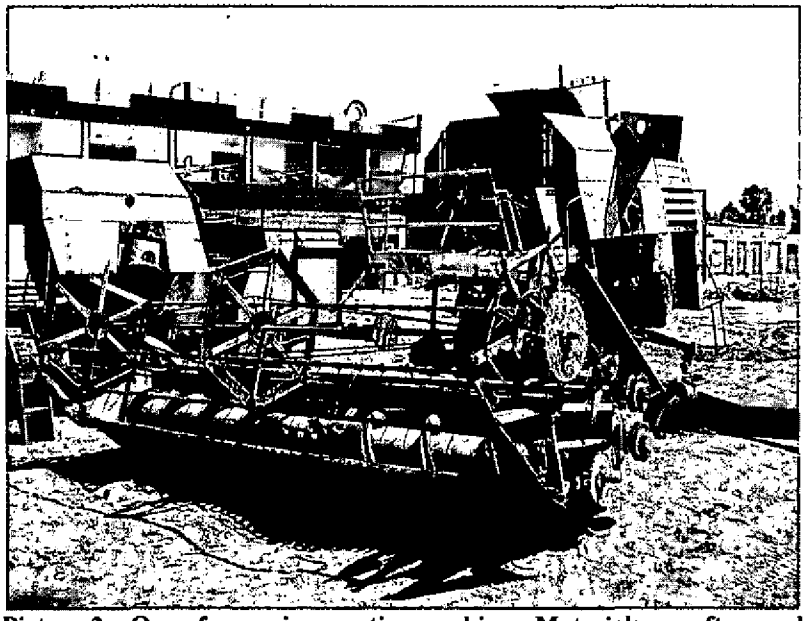
Justification for Supporting Training of Mechanics

- The mechanics lack specialised skills
- Lack of quality craftsman ship
- Lack of quality control
- There is a virtually a total lack of mechanics/electricians who can handle electronic and hydraulic control mechanisms in modern tractors and combines. This is a problem frequently raised in the questionnaires
- Lack of equipment and suitable workshops with sufficient gear to safely dismantle a tractor or combine for repair
- An acute lack of spare parts

The demand is large and there are an estimated 3 to 4,000 tractors in Thi-Qar of which 35% is not functioning due to the reasons mentioned above and there are around 200 combines in Thi-Qar. The exact number in working condition is not known, but the percentage is probably smaller than for the tractors, because combines are more difficult to repair.

The lack of repair facilities in Thi-Qar for tractors and combines is a major contributing factor to the low productivity in the agricultural sector it influences:

- Proper soil preparation
- Quality of operations
- Timeliness of operations
- Production costs



Picture 2 – One of many inoperative combines. Materials are often used as spare parts for other machines

Beneficiaries

- IDP with farming background and practical skills motivated to go into a new profession.
- Employs of metal and mechanical workshops, who has some practical experience in metalworking and mechanics
- Young persons who has had a vocational technical training, currently unemployed
- Former military personnel with a technical background and practical skills

Location

Beneficiaries should be selected from all districts in the province.

Training

This is not a vocational training course. The beneficiaries should therefore have some basic skills in calculation, arithmetic physics etc to enable them to understand the basic function of engines and control mechanisms.

The beneficiaries should receive a basic training in quality craftsman ship of motor mechanics:

- Repair of engines/motors
- Repair of hydraulics
- Repair of electrical and electronic control instruments for tractors and combines

It is *recommended* that all trainees (beneficiaries) will have a thorough introduction to motor mechanics after which specialised training courses will be given in e.g. hydraulics, electronic control and the combination of electronic and hydraulic control in combines. Depending on the skills and background of the trainees specialised training courses could be carried out in the above mentioned subjects. Regular refresher courses should be envisaged.

Tractors and combines in need of repair should be used for the practical part of the training. The profit from such repair should be ploughed back to the training activities and used for continuous refresher courses of both beneficiaries and instructors.

One training centre giving training to beneficiaries should be set up by MOLSA in the existing training centre in Nassriayh. With the limited resources available and the complex task of tractor and combine repair it is not judged feasible to have more than 1 training centre covering all of Thi-Qar.

Cottage Industry Facility Centres
All relevant cottage industry facility centres could assist the trainees to establish mechanical tractor and combine workshops.

Project Inputs

- Training of trainers
- Tool boxes with basic tools for mechanics (to be specified)
- Two sets of machine and hand tools as specified in PF report
- One sets of different lifting gear relevant for the dismantling of tractors and combines
- One set of specialised control equipment for hydraulics and electrical installations

Project Costs

Foreign (project) costs:

• Tools for Metalwork training	49,640 USD
• Tool boxes for beneficiaries trained first year	32,000 USD
• Specialised measuring instruments(estimate)	12,000 USD
• Lifts and Lifting gear (estimate)	15,000 USD
Total foreign costs:	*108,640 USD*

Local (estimated project) costs:

• Installation of equipment and machines	500 USD
•	
• Consumable material for the training courses	8,000 USD
• Salaries for instructors (3)	5,000 USD
• General operating costs of the training facilities	6,000 USD
• Board and lodging for trainees who can not commute to the centre every day (3$/day)	12,000 USD
• Training material: manuals, drawings etc.	4,000 USD
• Contribution to overhead costs for the total centre	3,500 USD
Total local costs:	*39,000 USD*

Local (estimated project) costs for 3 year:	117,000 USD
Total Project costs (3 years):	**225,640 USD**
Total costs to be born by the project in year 1	***147.640USD***

Total Financial Project Benefits (3 years):

The total financial benefits for 195 persons over a period of 3 years will be:

Year 1	50% of 65 persons of	1,200,000ID	39,000,000ID
Year 2	65+(50%of 65)	1,200,000ID	117,000,000ID
Year 3	130+(50%of65)	1,200,000ID	195,000,000ID
Total financial benefits over 3 years:			351,000,000ID

Equavalent to 234,000USD

The financial benefits outweigh the financial costs for the 3 year period. In case a 10 year Period had been used the benefits would be significantly larger.

Assumptions:

- 20 persons per class (training course)
- 4 courses per year
- Training is run for 3 years.
- Toolboxes is only included in the budget for year 1. The lack of free distribution of tools is not influencing the graduate chances of getting employment in existing workshops
- Total number of beneficiaries is 240 persons.
- 195 of the trained beneficiaries graduate and establish themselves with own workshops or gets employment in an existing workshops.
- The 195 beneficiaries generate a net financial income of at least 50% of the minimum government salary of 200,000ID/month

Evaluation of the Risks:

1) The assumed incomes will not be reached.
   The income might be some what higher than for the carpenters. Good mechanics can charge more than carpenters because alternatives to local repairer exist only in Basrah and Baghdad.
   In this budget, we have used the same future income for the mechanics as of r the carpenters. Tihis should be on the low side which means that the risk of not reaching the assumed income is considered small.
2) The number of mechanics which can be absorbed in the province will not be reached. The risk of not being able to find employment for well trained mechanics is considered low in view of the rapid increase in the number of cars, tractors combines and lorries.

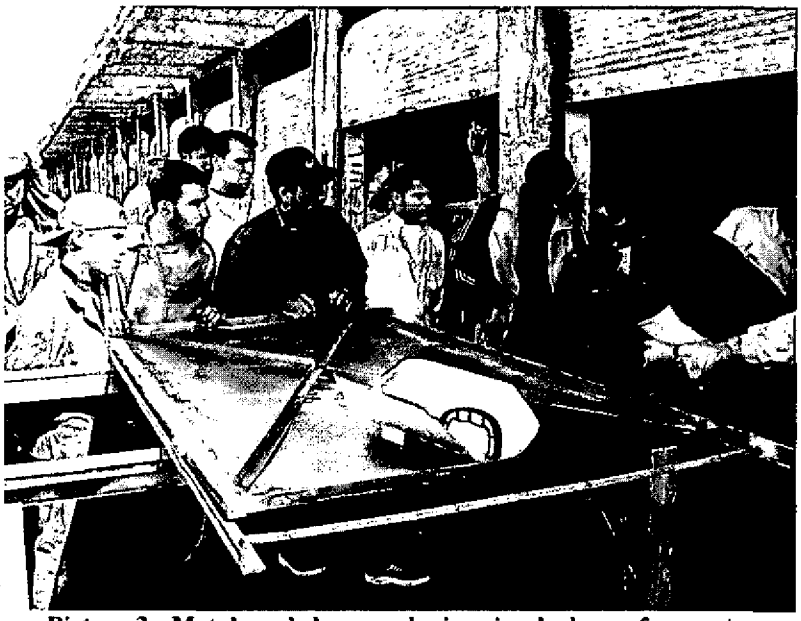
Recommendations

It is *recommended* to include hydraulics and electronic control mechanisms in the curriculum.
It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that training of mechanics should be supported by the project.

3.3 Welding/Fabricating, General Metal Works

Background

There is a great number of small artisan type metalwork, but they are mainly seen to produce doors, windows, blinds and grits for windows. There is no larger workshop for production of machine parts etc. Equipment for stainless steel welding is not found in Thi-Qar. There is no private firm where machines or parts for machines can be made to order.



Picture 3 - Metal workshop producing simple doors, fences etc.

Some of the larger plants like the power plant and the spinner do have own workshops, but they are only used for internal repair.

HAP Consultants was informed that there is neither manufacturing of machines in Nassriayh nor in Thi-Qar, except for a production of a crude form of hammer-mill used to mill dried fish into animal fodder. It was, however not possible to locate this plant.

Justification for Supporting Welding/Fabrication, General Metal Works

There is a great need for improved welding and finishing techniques. In case agro-processing industries develop it will be necessary to be able to weld stainless steel.

Beneficiaries

- IDP with some relevant background and practical skills motivated to go into a new profession
- Employs of machine and mechanical workshops, who has some practical experience in metalworking
- Young persons who has had a vocational technical training, currently unemployed
- Former military personnel with a technical background and practical skills

Picture 4 – There is a need for training in improved welding techniques and finishing

Location
Beneficiaries should be selected from all the districts and sub-districts.

Training
This is not a vocational training course. The beneficiaries should therefore have some basic skills in calculation; geometrics etc to enable them to design and produce machine items. The beneficiaries should receive basic training in quality metal craftsman ship of including amongst others:

- Repair of agricultural machines
- Production of parts for agricultural machines - welding and forging
- Production of simple machines for processing of agricultural products

One training centre giving training to beneficiaries should be set up by MOLSA in the existing training centre in Nassriayh being responsible for training of all beneficiaries.

Agricultural machines in need of repair should be used for the practical part of the training. The profit from such repair should be ploughed back to the training activities and used for continuous refresher courses of both beneficiaries and instructors.

It is assumed that all trainees (beneficiaries) will have a thorough introduction in metallurgical subjects after which specialised training courses will be given in e.g. welding, lathing etc.

Cottage Industry Facility Centres
All relevant cottage industry facility centres could assist the trainees to establish metal workshops.

Project Inputs
- Training of trainers
- Tool boxes with basic welding / metal works equipment (to be specified)
- The same two sets of machine and hand tools used for the mechanics should be used for training metal workers. The MOLSA training centre in Nassiriyah might have to have

alternating classes so that two groups uses the same machines and tools but at different times.

- One set of stainless steel welding equipment supplied to MOLSA Training Centre, Nassriyah

Project Costs

Foreign (project) costs:

• Tools for Metalwork training (included above)	
• Tool boxes for beneficiaries trained first year	32,000 USD
• Specialised SS welding equipment estimate)	12,000 USD
• SS for production of food processing equipment	10,000 USD
• SS special parts valves, pipes etc for the above	11,000 USD
Total foreign costs:	*65,000 USD*

Local (estimated project) costs:

• Installation of equipment and machines	500 USD
• Consumable material for the training courses	8,000 USD
• Salaries for instructors (3)	5,000 USD
• General operating costs of the training facilities	6,000 USD
• Board and lodging for trainees who can not commute to the centre every day (3$/day)	12,000 USD
• Training material: manuals, drawings etc.	4,000 USD
• Contribution to overhead costs for the total centre	3,500 USD
Total local training costs:	*39,000 USD*

Local (estimated project) costs for 3 year:	117,000 USD
Total Project costs (3 years):	**182,000 USD**

Total costs to be born by the project in year 1 ***104.000USD***

Total Financial Project Benefits (3 years):

The total financial benefits for 195 persons over a period of 3 years will be:

Year 1	50% of 65 persons of	1,200,000ID	39,000,000ID
Year 2	65+(50%of 65)	1,200,000ID	117,000,000ID
Year 3	130+(50%of65)	1,200,000ID	195,000,000ID
Total financial benefits over 3 years:			351,000,000ID

Equavalent to 234,000USD

The financial benefits outweigh the financial costs for the 3 year period. In case a 10 year Period had been used the benefits would be significantly larger.

Assumptions:

- 20 persons per class (training course)
- 4 courses per year

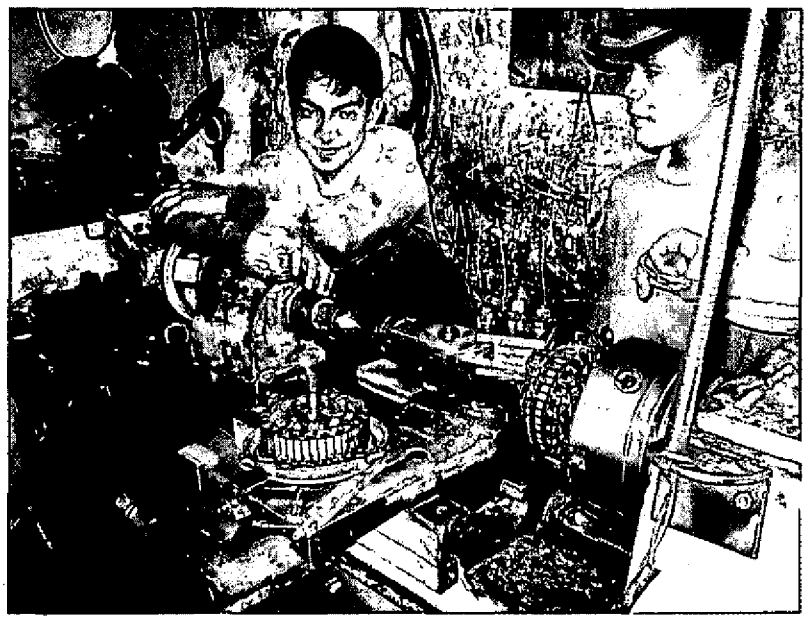
- Training is run for 3 years
- Total number of beneficiaries is 240 persons.
- 195 of the trained beneficiaries graduate and establish themselves their own workshop or gets employment in an existing workshops.
- The 195 beneficiaries generate a net financial income of at least 50% of the minimum government salary of 200,000ID/month

Evaluation of the Risks:

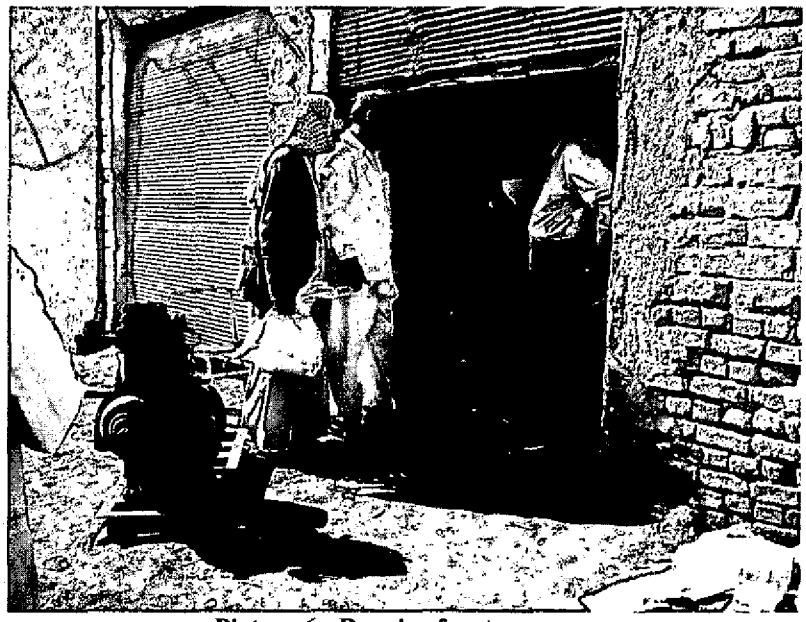
- The assumed incomes will not be reached.
  There are many existing workshops where it will be easy for well trained metalworkers to get employment and the risk of not reaching the estimated 50% of the min government salary is considered low
- The market will not be able to absorb the 195 new graduates in the province
  over the next 3 years. The risk of skilled metal worker not finding employment is low due to the increase in the building industry, the need for repair of agricultural machines and equipment and the increase in the number of automobiles.

Recommendations

It is *recommended*, that the project supply a set of stainless steel welding equipment.
It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that training of metal works should be supported by the project.



Picture 5 - Metal workshop in Nassiriyah



Picture 6 - Repair of water pumps

3.4 Blacksmithing

Background
Locally metal tools are being made in Nassriayh. They are crudely made lack finish and durability. Many customers prefer imported Chinese once with better finish. The price is more or less similar for imported and locally produced.

No one new of any blacksmith making parts and or repair of agricultural machines such as e.g. plough shears, ware and tare parts for harrows, disk ploughs etc.

HAP was informed that 40 percent of the farmers in Thi-Qar carry out all operations manually. With 60,000 rural households, approximately 25,000 of these relay only on hand tools. Assuming that each household needs at least 2 sets of each of the following tools the total need could be 150 to 200,000 of:

- Hoes
- Spades
- Shovels
- Rakes
- Sickle
- Threshing (flail) although many use animals working in the grain and sifting it manually

To this number should be added the hand tools used by farmers using mechanised cultivation methods. Hence the amount might at least double. Assuming a life span of 2 to 3 years per tool the need will be about 200,000 pieces per year.

The handles and shafts used today are often home made roughly cut branches or pieces of wood, which does not have an ergonomic design but requires additional force. Productivity could be improved by the use of suitable designed durable tools and proper wooden shafts.

Justification for Supporting the Project
Existing locally made and or imported tools are crude and not of good quality. There is scope for improvement both regarding design and durability.

Very little if any forged parts are produced to day in Thi-Qar. There is a need for production of e.g. plough shears etc. particularly so because no spare-parts are available or difficult to obtain from Baghdad

Beneficiaries
- IDP with some practical background and practical skills motivated to go into a new profession.
- Employs of machine and mechanical workshops, who has some practical experience in metalworking
- Young persons who has had a vocational technical training, currently unemployed
- Former military personnel with a technical background and practical skills.

Location
Beneficiaries should be selected from the districts and sub-districts of Nassiriyah, Shatra and Rafaae.

Training
One training centre giving training and support to beneficiaries should be set up by MOLSA in the existing training centre in Nassriayh being responsible for all 5 districts. With the limited resources available it is not judged feasible to have more than 1 centre for all of Thi-Qar.

The centre should provide practical instruction and training in:

- Forging of hand tools
- Production of parts for agricultural machines - welding and forging

Parts for agricultural machines should be produced as part of the practical training. The profit from sale of such parts should be ploughed back to the training activities and used for continuous refresher courses of both beneficiaries and instructors.

It is assumed that all trainees (beneficiaries) will have a thorough introduction in metallurgical subjects where after specialised training courses will be given in forging.

Cottage Industry Facility Centres
All relevant cottage industry facility centres can assist the trainees to establish forgeriesand to sell the products.

Project Inputs
- Training of trainers
- "Tool boxes" (to be specified)
- Two forges and 2 sets of hand tools used in connection with forges shall be supplied to MOLSA Training Centre in Nassiriyah. (Not specified in Patric Forrest's UNIDO report). The foreign supply only contains design, mechanical parts (blower) and tools. The forges with chimney should be constructed locally.
- Supply of some moulds for tools as examples.

Project Costs

Foreign (project) costs:

• Equipment and tools for 2 forges (estimated)	18,500 USD
• "Tool boxes" for beneficiaries first year	24,000 USD
• Molds for tools (estimated)	4,000 USD
• Iron for casting for the start up phase (estimate)	6,000 USD
Total foreign costs:	*52,500 USD*

Local (estimated project) costs:

Investments

• Installation of equipment and machines	1,000 USD
• Construction of 2 forges (20m3 bricks)	3,000 USD

• Salaries, mortar etc.	1,000 USD
Total investment:	5,000 USD
Operating costs	
• Consumable material for the training courses	12,000 USD
• Salaries for instructors (3)	5,000 USD
• General operating costs of the training facilities	6,000 USD
• Board and lodging for trainees who can not commute to the centre every day (3$/day)	18,000 USD
• Training material: manuals, drawings etc.	6,000 USD
• *Contribution to overhead costs for the total centre*	*3,500 USD*
Total local training costs:	*55,500 USD*

Local (estimated project) costs for 3 year:	156,500 USD
Total Project costs (3 years):	**209,000 USD**
Total costs to be born by the project in year 1	***108.000USD***

Total Financial Project Benefits (3 years):

The total financial benefits for 195 persons over a period of 3 years will be:

Year 1	50% of 50 persons of	1,200,000ID	30,000,000ID
Year 2	65+(50%of 50)	1,200,000ID	90,000,000ID
Year 3	130+(50%of50)	1,200,000ID	150,000,000ID
Total financial benefits over 3 years:			270,000,000ID
Equavalent to 180,000USD			

The financial benefit is some what less than the financial costs for the 3 year period. In case a 10 year period had been used the benefits would be significantly larger.

Assumptions:

- 20 persons per class (training course)
- 3 courses per year
- Training is run for 3 years
- Total number of beneficiaries is 180 persons.
- The provisions labelled "toolboxes" is assistance to the beneficiaries in the first year to establish forgeries. Specifications will be drawn up once it is known what is available in the local market for the construction of forgeries.
- 150 of the trained beneficiaries graduate and establish themselves their own workshop or gets employment in an existing workshops.
- The 150 beneficiaries generate a net financial income of at least 50% of the minimum government salary of 200,000ID/month

  150 persons of 1.2 Mill ID. = 180,000,000 ID equivalent to **120,000 USD**

Evaluation of the Risks:

- The assumed incomes will not be reached.

There are no or few existing forgeries in Thi-Qar. It will be easy for well trained blacksmiths to get employment/jobs repairing agricultural machines and equipment and casting tools. The risk of not reaching the estimated 50% of the min government salary is considered low

- The market will not be able to absorb the 150 new graduates in the province over the next 3 years. The risk of skilled blacksmiths not finding employment is low due to the need for repair of agricultural machines and equipment.

Recommendations

It is *recommended*, that the project supply sets of forging equipment and tools.
It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that training of metal works should be supported by the project.

3.5 Sewing/Garment Making

Background

There are about 150 to 200 tailors making both traditional and western style cloth. Each tailor shop has 2 to 3 persons working making a total number of employees in this sector about 500 in the Thi-Qar Governorate.

The clothes made by these tailors are reported not the most popular. Especially imported Chinese made clothes are in demand mainly because it is cheap. There is quit a good supply of this type of cloths in the market. In addition, there is a large second hand market for cloth of all kinds.

Picture 7 – Woven men's garments which has high rural and urban demand

It is assumed that most of the potential beneficiaries can work half day only, because they have other household duties to attend to. It is furthermore assumed that working 4 to 5 hours per day they can finish e.g. 1 to 2 shirts in a working day, when all activities such as purchase of material, design, cutting and selling are included. On a yearly basis this means about 400 pieces can be made.

Retail prices in the market of:

• Shirts	10,000ID	Material	4,500ID
• Trousers	11,000ID	=	5,000ID
• Dresses	30,000ID	=	24,000ID
• Abayas	25,000ID	=	18,000ID

The above prices are lowest prices found in the market. Prices increase from this level according to quality.

The following calculation gives an overview of a workers estimate income achieve from sewing a shirt.

- Income: One Shirt 10,000ID

• Material costs	4.500ID
• Other costs	1,000ID
• Transport to market	500ID
Return to labour	4,000ID

At an average sales price of 10,000 ID per piece the yearly turnover would be 4,000,000ID and with a margin of 40% the return to labour would be 1,600,000ID this is still low compared to the salaries introduced by the new government of min 200,000ID per month. But it is considerably better than the 4,000ID minimum "social security" distributed to day.

The investment would be about 100USD or 150,000ID. It is *recommended* that half of this should be given as a grant and half as a loan by the Agricultural Bank. The beneficiaries should repay the loan of 75,000ID in 1 year. The revenue should be used for buying sowing machines for the beneficiaries in year 2 and 3, who can get a 25% grant and a 75% loan.

Assuming that there will be 240 beneficiaries the cost of the intervention would be: 240 treadle machines of 100 dollars each, total 24,000 dollars or 36 Mill ID.
Totally 96,000 pieces could be produced, which is judged possibly to be absorbed in the market of the southern region. Over time, this number can increase. The benefits in one year for 240 beneficiaries would be 1,600,000 x 240 = 384 Mill ID or about 10 times more that the direct investment.

Justification for Supporting Sewing/Garment Making
It is estimated that 200 to 300 women could benefit both financially and "in kind" by sowing for customers and family provided they are supported by an active association and one or more capable NGOs in the area.

One area of interest could be the more elaborate dresses for women popular in the area. They should be made to measure, and designs follow traditional pattern. They are therefore more difficult to import ready to ware.

Even though there is no link between this intervention and the development of a local manufacturing industry of machines and equipment assistance to this activity is justified for two main reasons:

- The number of women who could benefit is large
- The financial benefit is considerable larger than the costs. It is estimated that the investment costs for 80 sowing machines are 37,5Mill ID and the financial return to labour in one year is 100 Mill ID

Beneficiaries
Following groups are considered beneficiaries:

- IDP women
- Unemployed women and women being head of house-holds

Location
Beneficiaries should be selected from all districts and sub-districts.

Training
The project management should themselves or in collaboration with NGOs arrange training of the beneficiaries who should receive a practical instruction in design, cutting and sowing as well as simple business administration and credit handling. The training could take place at the associations, or possibly at the cottage industry facility centres once they become operative.

Upon completion of the training the beneficiaries should in the first year receive a sowing machine at a subsidised rate. The subsidy should be given as a loan and paid back to the centre over a period of 2 to 3 years. The proceeds from the repayment should be used for promotion of ongoing or new activities.

Cottage Industry Facility Centres
The associations could form cottage industry facility centres which should assist the associations in marketing of the products of the associations, and possibly buying of inputs to the associations.

Project Inputs

- Training of trainers
- Supply of sowing-machines for the associations to be used for training
- Supply of sowing-machines for beneficiaries
- Supply of consumables for the training (Thread, cloth etc. which could be bought locally)

Project Costs

Foreign (project) costs:
Cost of sowing-machines for the centres:

- 5 cottage industry facility centres should be supplied with 8 sowing machines each — 4,000USD
- Cost of sowing-machines for beneficiaries: 80 machines — 8,000USD
- Cost of consumables for the start up of 5 training centres: Thread, cloth etc. (which could be bought locally): — 5,000 USD

Total foreign costs: — 17,000 USD

Local (estimated project) costs for 5 Cottage Industry Facility Centres:

- Consumable material for the training courses — 2,500 USD
- NGO instructors (25 training sessions of 2 weeks) — 2,500 USD
- Training material: manuals, design etc. — 150 USD
- Contribution to overhead costs for the district centre — 5,000 USD

Total local training costs:	10,150 USD
Local (estimated project) costs for 3 year:	30,450 USD
Total Project costs (3 years):	**47,450 USD**

Total costs to be born by the project in year 1 ***27.150USD***

Total Financial Project Benefits (3 years):

The total financial benefits for 240 persons over a period of 3 years will be:

Year 1	50% of80 persons of	1,600,000ID	64,000,000ID
Year 2	(80 + 40) -	1,600,000ID	192,000,000ID
Year 3	(160 + 40)	1,600,000ID	320,000,000ID
Total financial benefits over 3 years:			576,000,000ID

Equivalent to 384,000USD

The financial benefits outweigh the financial costs for the 3 year period.

Assumptions:

- 8 persons per class (training course)
- 2.5 courses per year of 2 to 3 weeks duration Total 100 persons trained per year
- Training is run for 3 years
- Total number of beneficiaries is 300 persons.
- 240 of the trained beneficiaries graduate and establish themselves with own business or gets employment in an existing tailor shop.

Evaluation of the Risks:

- There is a risk that only half or less finished items can be sold commercially. Even with a sale of 25% of the assumed the costs can be covered and the loan repaid. To reach 25% of the planned is not considered a major risk. In this case the beneficiaries can most likely sow for neighbours and barter for food and services. The beneficiaries can sow for family members and substitute cash which would other wise be spent on cloth with own products.

Recommendations

It is *recommended*, that the project supply sowing machines to the beneficiaries.
It is *recommended*, to support this activity, and it was decided by the participants in the debriefing meeting that training of beneficiaries in sowing should be supported by the project

3.6 Spinning

Background

There is a large Spinnery in Nassriayh. This is currently not operating, but the Consultants were told that there are plans to start up the production. The factory is apparently in the process of hiring personnel. It is HAP Consultants impression that a future production will not have any direct influence on a cottage industry spinning activity, a part from a likely increase in wool price. There is a large wool production in the Governorate. HAP Consultants estimate that around 500 ton wool is produced per year. This is mainly sold via merchants to Baghdad.

Picture 8 – Raw wool ready for processing

The local NGO, The Union of Iraqi Women contacted by the Consultants expressed willingness to disseminate spinning techniques and train women. Currently, they do not provide training within this field, but some of their members possess knowledge of spinning.

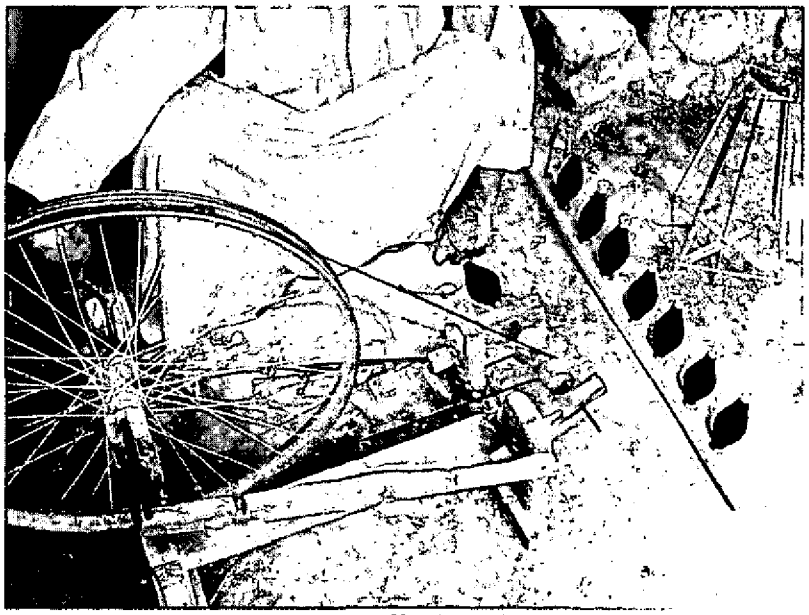
Justification for Supporting Spinning

By washing, carting, spinning, and using the spun wool for e.g. carpets value can be added locally and employment generated. There could be a direct link between this intervention and the development of a local production of spinning and carting machines.

It is the impression that to carry out a successful project in this field a strong NGO involvement is needed. The NGO should be able to:

- Select the participants with a view to entrepreneurial skills and attitude
- Support and arrange the buying of wool in order to take advantage of collective bargaining power. Assist in selection of quality and dies
- Support and arrange the sale and marketing of the finished products
- Possibly arrange contract work for customers in the richer neighbouring countries

Spinning activity is simpler and it is likely that individual participants can handle these functions themselves.



Picture 9 – Simple, yet effective spinning equipment

Beneficiaries

- IDP women.
- Unemployed women and women being head of house-holds
- Semi-nomadic women tending sheep

Location

Beneficiaries should be selected from all 5 districts and sub-districts.

Training

The Project management should themselves or with the assistance of NGOs arrange practical instruction and training in design, carting, spinning as well as business administration and credit handling. The training could take place at the associations, or possibly at the cottage industry facility centres once they become operative.

Upon completion of the training the beneficiaries should receive carting and spinning wheels made by the MOLSA Training centre in Nassriayh at a subsidised rat. The subsidy should be given as a loan and paid back to the centre over a period of 2 years. The proceeds from the loan repayments should be used for promotion of the activities of the centre.
The investment could be about 200USD or 300,000ID. It is *recommended* that half of this should be given as a grant and half as a loan by the Agricultural Bank. The beneficiaries should repay the loan of 150,000ID in 1 to 2 years. The revenue should be used for buying spinning equipment for the beneficiaries in year 2 and 3, who can get a 25% grant and a 75% loan.

Cottage Industry Facility Centres

The associations could form cottage industry facility centres which should assist the associations in marketing of the products of the associations, and possibly buying of inputs to the associations.

Project Inputs

- Training of trainers
- Supply of carting machines and spinning wheels to the chosen training facilities
- Supply of carting and spinning wheels to the training centre in Nassriayh to be used as modules for the production by the trainees of spinning and carting machines
- Purchase of carting machines and spinning wheals from the woodwork shops established by the trainees.
- Supply of consumables for the training. (Wool dies etc. purchased locally) for the start up phase.

Project Costs and Benefits

Foreign (project) costs:

Cost of carting drums and spinning wheals for the 5 district centres:

• 5 training facilities should each be supplied with	
1 carting drum each	1,700 USD
4 traditional spinning wheals each	6,800 USD
4 sets of various ball winders, hand carters, drop spindles etc.(estimate)	800 USD
• Cost of consumables for the start up: Wool, dies etc.(which should be bought locally):	600 USD
• Purchase of locally produced spinning wheals etc. to be distributed to 50 beneficiaries year 1/200$/set	10,000 USD
Total foreign costs:	*19,900 USD*

Local (estimated project) costs for 5 Cottage Industry facility Centres:

• Consumable material for the training courses	1,000 USD
• NGO instructors (20 training sessions of 2 weeks)	2,000 USD
• Training material: manuals etc.	200 USD
• Contribution to overhead costs for the district centre	3,000 USD
Total local training costs:	*6,200 USD*

Local (estimated project) costs for 3 year:	18,600 USD
Total Project costs (3 years):	**38,500 USD**

Total costs to be born by the project in year 1 ***26.100USD***

Total Financial Project Benefits (3 years)

The total financial benefits for 150 persons over a period of 3 years will be:

Year 1	50 persons of	700,000ID	35,000,000ID
Year 2	100 -	700,000ID	70,000,000ID
Year 3	150 -	700,000ID	105,000,000ID
Total financial benefits over 3 years:			210,000,000ID

Equavalent to 140,000USD

The financial benefits outweigh the financial costs for the 3 year period.

Assumptions:

- 10 persons per class (training course)
- 6 courses per year of 1 to 2 weeks duration. Total 60 persons trained per year at the cottage industry facility centres
- Training is run for 3 years
- Total number of beneficiaries is 180 persons.
- 150 of the trained beneficiaries graduate and establish themselves their own business or gets employment in an existing business.
- The 150 beneficiaries generate a net financial income of around 700,000ID, which is equal to about 250 kg spun wool at a sales price of 2750ID/kg. (details are shown below)

Evaluation of the Risks:

- There is a risk that only half or less spun wool can be sold commercially. At 100 kg spun wool the cost of raw material and the 150.000ID repayment to the bank can be met. It is not considered a major risk not to reach 40% of the planned capacity.

Specification of costs and benefit

It is estimate that 150 women could find a supplementary income from spinning as a part time occupation. This could especially be women moving as semi-nomads with their families tending sheep but also women in villages with fewer sheep, or no sheep at all. Carting of the wool should be organised in centrally located places, because this is both an expensive piece of equipment and it is fairly large to move around for the households tending sheep.

It could be a possibility for the District centres to make the carting machine available for a small fee to the beneficiaries.

The estimate is not based on any systematic study of the demand. It is based on an assumption that most of the potential beneficiaries can work half day only, because they have other household duties to attend to. It is furthermore assumed that working intermittent 4 to 5 hours per day they can finish e.g. 0,5 to 1kg in a working days, when all activities such as purchase of material, and selling are included. On a yearly basis this means about 200 to 300 kg can be made per household. In total, this gives 50,000 kg, corresponding to about 10% of the potential wool production in Thi-Qar. This is based on about half a million sheep giving 1 kg of wool per head. This amount is judged possibly to be absorbed in the market of the southern region particular for carpets.

It is assumed that 25 carpenters/woodcarvers will be trained in among others the activity of making spinning wheals drum carters etc. In addition to the general training course for wood workers, they should receive a specialised 4 weeks training course for the production of spinning equipment. Upon completion of the training course they should be assured of a certain supply of equipment to the project. This would help them in the upstart phase of their business.

To speed up the effect, the 150 women might be given free of charge a set of spinning wheals and accessories produced by the local craftsmen trained by the project. After having undergone training about 42% of the neediest participants, and the best qualified with regard to skills and business aptitude should receive a set of spinning equipment. The person should agree to repay 50% of the

value of the equipment received over a 2 year period. A loan agreement should be drawn up with the agricultural bank.

There is a direct link between this intervention and the development of local woodwork skills for spinning and carting machines.

Retail and wholesale prices in the market for wool are:

	Wholesale	Resale
"Dusty" unwashed wool:	750ID/kg	900 to 1000ID/kg
Washed wool:	1000 to 12000ID/kg	1300 to 1500ID/kg

The price of spun wool is not known, but assuming that it doubles in price it would be around 2,5 to 3.000ID per kg.

Recommendations

It is *recommended*, that the project supply carting machines and spinning wheels etc. to the MOLSA training centre in Nassiriayh. Here they should be used be reproduced as part of the training for carpenters and subsequently distributed to the beneficiaries at subsidised prices.
It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that training of beneficiaries in sowing should be supported by the project.

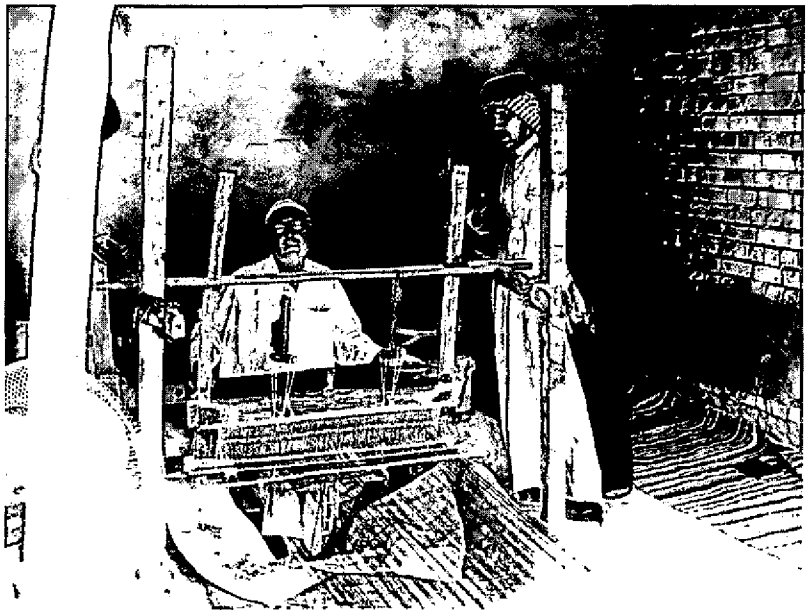
Picture 10 – Dyeing of wool. Many colour variations are found

3.7 Carpet making and weaving

Background

Coarse quality carpets of the woven (Kelim) type and bags etc. are produced by individuals as a cottage industry. Colours are bright, synthetic once and patterns simple. It is difficult to assess the quantity produced since most of the production is sold to merchants who sell them outside Thi-Qar.

Two larger privately owned carpet-weaving workshops were established in 1993 and 1995 in Al Garaf employing about 450 persons. These were abandoned two to three years ago and do not function any more.



Picture 11 - Weaving Workshop

The two workshops had a size of 60m x 15m = 900 m^2. Each one contains 35 iron horizontal looms. The types of carpets produced in the shop were:

A - Tabrez type 3m x 2.5m
B - Kashan type 2m x 3m
C - Solaf type 3m x 5m
D - Karkak type 1m x 3m

The quantity of the production was 10 to12 carpets per month. The quality of the production was good (grad A). The products were marketed outside Thi-Qar.

It is not judged feasible to revive these factories because they are privately owned and do not target the beneficiaries identified by the project. In addition, mainly child labour was used. There is no close market for the products, requiring an export organization which does not exist today.

Local looms exist and function but are crudely made. They are suitable for the current production of coarser woven carpets and mats. It would be too costly for the beneficiaries to quire foreign made looms for the ordinary carpet production.

The emphasis for the assistance from the project for the carpet production should therefore be on improved skills, design and dies.

For the production of finely woven "Abayas" better quality looms are required. The training of carpenters by the project should concentrate on assistance to a local production of such looms. This should be done by introducing looms as objects to be produced in the training program for carpenters and wood workers.

The training centre in Nassriayh and some of the CIFC should be furnished with a total of 12 looms, suitable for weaving of very fine material. 2 looms shall be delivered to the training centre and used as models for the trainees whereas the other 10 for the CIFC should be used for training of beneficiaries.

Justification for Supporting Carpet Making
There is scope for improving the quality of locally produced woven carpets both regarding design, dies and weaving techniques.

The production of "Abayas" will be facilitated with better quality looms, training in quality weaving of high value very thin material. This activity ties in with the development of locally manufactured looms by carpenters as part of the training in Nassriayh. Further more an increase in carpet and finely woven material would increase the demand for locally spun wool.
Assistance for carpet production is frequently mentioned by the district and sub-district authorities in their responses to the HAP questionnaire as projects to be supported.

Beneficiaries
- IDP women, handicapped and disabled persons
- Unemployed women and women being head of house-holds
- Semi-nomadic women tending sheep

Location
Beneficiaries should be selected from all 5 districts and sub-districts.

Training
The beneficiaries should receive practical instruction and training in design, dying, and weaving techniques as well as simple business administration and credit handling.

Upon completion of training, the beneficiaries should receive looms made locally by the persons who has participated in the training course in Nassriayh or workshops who have had personnel attending. The project should buy the looms from the newly established "trainees or existing workshops and distribute them to selected beneficiaries at a subsidised rate. The beneficiaries should pay 50% of the cost of the loom. The payment should be given as a loan and paid back to the the Agricultural Bank over a period of 2 to 3 years. The proceeds from the repayments should be used for promotion of activities of the centres.

Cottage Industry Facility Centres
The Project management should on its own or in collaboration with NGOs arrange practical instruction and training in design, dying, knotting and weaving techniques as well as business administration and credit handling. The training could take place at the associations or the cottage industry facility centres when they will be established.

Project Inputs

- (Training of carpenters/woodworkers)
- Supply of looms to the MOLSA training centre in Nassriayh as examples to be produced during the training courses and to the District centres to be used for training.
- Supply of raw material, which cannot be found or produced at the training centre.

Project Costs

Foreign (project) costs:

• Tools for woodwork training (incl. in carpenter training)	
• 12 Looms to be used as models and at the training centres (estimate)	18.450 USD
• 50 looms to be bought from local carpenters	56,000 USD
Total foreign costs:	*74,450 USD*

Local (estimated project) costs for training:

• Consumable material for the training courses	5,000 USD
• NGO instructors (20 training sessions of 2 weeks)	2,000 USD
• Training material: manuals, design etc.	250 USD
• Contribution to overhead costs for the Project management	4,000 USD
Total local training costs:	*11,250 USD*

Local (estimated project) costs for 2 year:	22,500 USD
Total Project costs (2 years):	**96,950 USD**
Total costs to be born by the project in year 1	***85.700USD***

Benefits

Total Financial Project Benefits	**n/a USD**

Assumptions:

- 10 persons per class (training course)
- 6 courses per year
- Training is run for 2 years
- Total number of beneficiaries is 120 persons.
- 100 of the trained beneficiaries graduate and establish themselves with own weaving shops.

The consultants have not received any prices for carpet and other woven material. It is therefore not possible to calculate the benefits. It is, however, most likely that this activity will be viable. Firstly,

because there are quiet a large number of persons engaged in this field. Secondly, quality "abayas" are costly. They have a high labour input but low raw material input.

Recommendations

It is *recommended* to support these activities, and it was decided by the participants in the debriefing meeting that training of beneficiaries in carpet weaving should be supported by the project.

Picture 12 – Carpets are made with various colours and patterns

3.8 Dairy Processing

Background

There is about 160,000 heads of cows and buffalos in the Thi-Qar Governorate. This is one of the major agricultural activities in the area. About 75 percent of the 60,000 rural households have cattle. Households having cattle have in average 3 to 6 heads. Milk cattle provide cash income from sale of milk products, beef and manure, and the stock represents an important asset for the families.

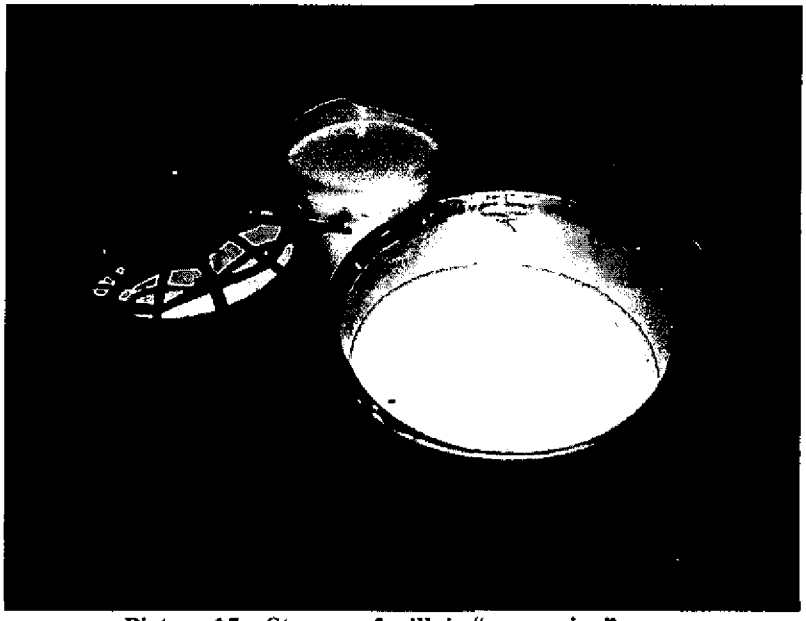
Many cattle farmers do not have sufficient land themselves for fodder production. Instead, land is rented from farmers growing barley in the winter period, and grass (often sprouting wild in the stubble after the barley have been grazed) in the spring. The cattle is mowed around in the province, and can be as far away as 100 km from the owners location. The cattle are tended by some of the household members, who stay in the field with the cattle. Milk is transported to the household by a rented truck, for which the household has to pay. The milk transport is organised in such way that all village members having cattle in the area share the same transport. The milk is transported in un-cooled aluminium cans of about 20 l.

Picture 13 – Milk pick-up point in Al Shatra with no cooling facilities

The milk is processed into a soft fresh cheese with high moisture content, and a type of sweet yoghurt. The processing is carried out by very simple means. Heating the milk in shallow aluminium pans, where lactic acid and culture is added. The curd is left in aluminium pots to coagulate covered by a mesh of branches and a cloth.

Picture 14 – Fire place for heating up milk in aluminium pans

The "processing" rooms are made of clay bricks, where a black layer of smoke particles from the open fires often covers the inside. Gas and wood is used to heat the milk. The sanitary conditions in the room are not considered optimal. In some cases, the milk is prepared in the same room used as kitchen and eating place for the family.



Picture 15 – Storage of milk in "processing" room

The two farmers visited did express a wish to improve the milk processing methods, but they think the government should be responsible.

The table below shows the number of livestock in the Thi-Qar Governorate.

Out of approx. 60,000 rural households in Thi-Qar:	Total no. of Households	Percentage of Total (%)	Total nos. of Livestock (referred to households using land or owning livestock only)
Households with at least one member engaged in agriculture	45000	75	
Owning Cows and Buffaloes	43800	73	157,680 Cows and Buffaloes
Owning Sheep	29400	49	467,460 Sheep
Owning Goats	13200	22	109,560 Goats
Owning Poultry	54000	90	594,000 Poultry

The average daily milk production is 4 to 5 litre in a lactation period of 200 days. The daily gain of calves is 160 to 200g per day. This low productivity results in proportionally large maintenance fodder compared to outputs. By increasing the productivity, the fodder consumption per unit of output would decrease considerably.

Traditionally, especially buffalos have been grazing on fresh reeds. The young shuts have a reasonable nutritional value; where as the older stems contain too much lignin. With the reduction of the marshes this fodder resource is no longer available in sufficient quantity. The traditional extensive production method had its merit, because it was cheap and most of the production was used for own consumption. To day the production method has changed. Many cattle farmers have moved from the former marshes to other areas. Many do not have land; hence they have to buy fodder. Fodder is procured in mainly two ways; Hay is bought as a summer fodder, and grazing land of mainly barley is rented in winter.

Farmers claim that the lack of fodder is the main problem. This is a result of both low crop and animal productivity. The cattle population of about 150,000 requires 4 donums or 1 ha per head. This means that practically all the 125,000 ha barley grown in the Governorate is consumed by cattle. The 3,500 ha fodder crops are neglectable compared to the demand.

Veterinarian services are scarce, and costly. Diagnosis is difficult to make due to lack of diagnostic laboratories, causing broad-spectre drugs to be used in excessive amounts, with limited effects.

The current production of milk in Thi-Qar is calculated to 150,000 t annually or 400 t per day. This gives a daily average consumption of 0.250 litre fresh milk for a population of about 1.5 Mill. Fresh milk, however, is virtually not sold, only cheese and sour milk products are produced because they can keep without a cooling chain. The value of the milk products when sold at the market is equivalent to 560ID per kg fresh milk or a total value of about 840,000,000,000ID (4.6 Mill $). The theoretical daily expenditure per inhabitant on dairy products is about 160ID or 10US cents.

There is no dairy in Thi-Qar. Milk is locally processed into yogurt and white cheese, which is sold unpacked in local markets.

To day producers of dairy products need a sanitary authorisation from the ministry of health to produce and sell dairy products for consumption. This regulation however is not enforced. It might be required in the future.

Justification for Supporting the Dairy Processing

The production of milk in the Governorate is estimated to 400 tons daily. Of this, a large proportion is produced in Al Shatra. It is processed into soft white cheese and yoghurt in a traditional way lacking proper hygiene. There is scope for improving the processing method and to add value by improved packing, and a more rational utilization of the raw milk. There is a market for high value dairy products in the larger towns in Thi-Qar. Imported dairy products from neighbouring countries as well as Europe were found in Nassriayh. A local production at competitive prices could substitute part of this import.

Beneficiaries

- Small dairy farmers including landless once to be formed into a dairy association
- IDP women. As dairy workers.
- Unemployed women and women being head of house-holds. As dairy workers.

The latter two groups could be trained as operators of the demonstration plant. Where as the association will be the owner and the responsible body for the operation.

Location

Beneficiaries should be selected from the district of Al Shatra, Nassiriyah, Chibiesh and Suq ash Shuyukh. The reasons for choosing these location is that there is a large concentration of cows and buffalos and there are many landless dairy farmers.

Training

The members of the association to be formed should receive training in the function of cooperatives, production planning, hygiene and sanitation, managerial and marketing subjects The training and support should not be limited to dairy processing. It should include broader dairy management subjects, such as feeding, breeding, milking techniques hygiene and heard management.

Few key members: General Manager, chief production manager, technical manager should be selected from persons with some relevant background and receive 3 to 4 month on the job training in Iraq or in neighbouring countries

Upon completion of the training the dairy association should receive the ownership of the demonstration plant at a subsidised rat. The own payment should be financed by a loan and paid back to the centre over a period of 5 years. The proceeds from the loan repayment should be used for promotion of the dairy industry in the province.

The operators should receive practical instructions in production of cheese, yoghurt and butter. Use of by-products as why and butter milk and general sanitary and hygiene.

Cottage Industry Facility Centres

The Project management should themselves or in collaboration with MOA and or NGOs provide practical instruction and training courses in the subjects mentioned above. The training should not take place at once, but be prioritised and planned to take place over a period of 9 month to 1 year following the production cycle

Project Inputs

- Training of instructors

- Supply of key parts of the equipment for a demonstration dairy plant producing soft white cheese, yoghurt and butter.
- Part of the equipment should be produced in the metal workshop in the training Centre in Nassriayh as part of the training for metal workers.

Investments:

Foreign

Set of dairy machines:	155.000 USD
Set of key components to be fitted to the tanks etc. to be produced by the training centre as part f the training, valves, spray nozzles etc	30.000 USD
Stainless Steel sheets for tanks etc	16.000 USD
Stainless Steel pipes, bends etc etc	11.000 USD
Process water installations	9.000 USD
Heating & hot water installations	11.500 USD
Cold store, unit	23.000 USD
Generator set:	18.000 USD
Transport costs	13.000 USD
Total foreign costs:	*286,500 USD*

Local

Building: 450m2 x 400000/m2	120.000 USD
Water-tank:	1.000 USD
Electrical installations	4.500USD
Connection to water point	3.000 USD
Sewage	3.500 USD
Pots and tools distributed to the beneficiaries in year 1	*5,000 USD*
Training and operation Al Shatra 1 year:	10.000 USD
Total:	*147.000 USD*

Total investment costs: **433,500 USD**

Costs and benefits

Butter 120kg of 4000ID/kg	480 USD
Soft Cheese 1200kg of 1600ID/Kg	1.920 USD
Income Yoghurt 8000 of 350ID/250g	2.350 USD
Total Income per day	4.750 USD

Raw milk 5000l of 1000ID/l	3.333.USD
Plastic cups, lids, labels etc.	660 USD
Packing material for cheese and butter	75 USD
Energy	110 USD
Water	130 USD
Total variable costs:	4.300 USD
Gross margin/day:	450 USD
Gross margin/year:	162.000USD

Maintenance: 7% of the mechanical parts	20,300 USD
Salaries 8 workers of 1,8Mill/year	9.600 USD
1.5 sales & managers	2.000 USD
Transport crates	3.500 USD
Transport	11.900 USD
Sales and marketing costs	12.000 USD
Total yearly costs:	59.300 USD
Profit per year	102.700 USD
Depreciation mechanical parts 10%	29.000 USD
Building and fixed installations 5%	4.250 USD
Net benefits after depreciation:	69.450 USD

Simple rate of return before depreciation:	24%
Simple rate of return after depreciation:	16%

The consultants have been informed that an association could be given an existing building by the MOA free of charge this has to be clarified.

Local (estimated project) costs for training:

• Consumable material for the training courses	5,000 USD
• NGO instructors (12 training sessions of 2 weeks)	2,000 USD
• Training material: manuals, design etc.	250 USD
• Contribution to overhead costs for the Project management	4,000 USD
Total local training costs:	*11,250 USD*

Local (estimated project) costs for 2 year: 22,500 USD

Total costs to be born by the project in year 1 ***444.750USD***

Assumptions:

- The plant will mainly produce soft Cheese, yoghurt, and butter
- The income is based on: 1600ID/kg soft cheese, 500ID/250g yoghurt, and 4000ID/kg butter
- Yoghurt is packed in plastic cups, semi manually packed and sealed with an aluminium lid The cheese and butter is moulded in forms and packed in parchment paper
- It is assumed that an association of dairy producers will be established to take the ownership of the plant
- It is assumed that the association will get a bank loan for the operating capital

To improve the dairy farmer's milk quality, handling, processing and general dairy farm management the project will in addition to the establishment of a dairy plant train following number of persons.

- 20 persons per class (training course)
- 6 courses per year
- Training is run for 2 yearprocessing

- Total number of beneficiaries is 240 persons
- 200 of the trained beneficiaries graduate

Recommendations

It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that dairy processing should be supported by the project.

3.9 Fish Gutting Plant

Background

The fish production in the five districts is shown in the two tables below. The survey team has collected the data presented in the first table. The second one contains data supplied by the NPC. There are large inconsistencies, which cannot be readily explained. Some of the differences might stem from differences in local consumption, drying of some of the catch, but both show a large fish production in the province.

Fish Production (Data from District surveys collected by the survey team)

District	Chibayish	Nassriayh	Al Shatra	Suq ash Shuyukh	Al Refai
Fish caught total t/year	9000	2950	1800*	1250*	-
Fish consumed by local community t/year	3000	-	800	750	
Fish for sale t/year	3000	2750	1000	500	40

(* Based on calculations made by HAP Consultants)

Fish Production (Data collected by the NPC)

District	Chibayish	Nassriayh	Al Shatra	Suq ash Shuyukh	Al Refai
Fish caught total t/year	1800	-	-	1200	-

Chibayish district has the smallest population of the five districts (around 70,000 inhabitants), and land/produce most of the fish.

Table 3.9.3 Prices summer and winter for Grade A

	Summer	winter	Difference summer-winter
Price to fishermen:	3000ID	3500ID	3000ID
Sales price Basrah	4000ID	6000ID	6000ID
Difference:	1000ID	2500ID	3000ID
Cost freezing			350ID
Costs: ice and transport	45ID	45ID	
Margin to traders and retailer:	955ID	2455ID	2650ID

Table 3.9.3 Prices summer and winter for Grade B

	Summer	winter	Difference summer-winter
Price to fishermen:	1000ID	1500ID	1000ID
Sales price Basrah	1500ID	2750ID	2750ID
Difference:	500ID	1250ID	1750ID
Cost freezing			350ID
Costs: ice and transport	45ID	45ID	
Margin to traders and retailer:	455ID	1205ID	1400ID

Summer is the peak season with prices around 3,000ID ab. harbour for grade A and 1.000ID for Grade B. The production in the summer (May to October) is 60% of the total yearly production. Prices are 66% in the summer compared to the winter once for Grade B, which is the majority landed. In the winter, the price raises to 3,000 and 1500ID respectively for Grade A and B. Price for smaller fish and fish with lower quality is considerably cheaper (500 to 750ID/kg). The best quality is all exported to other areas of Iraq. Today the fish is iced and shipped fresh. Some inferior grades are dried in the summer and used as animal fodder.

The price for flake ice and transport to urban areas is estimated to 45ID/kg. A major problem for preservation of the fresh fish is the unstable electricity supply affecting the flake ice production. The fish is not gutted by the fishermen it is iced whole and transported to market.

The existing cold chain for the area looks as follows:

1. No of cold stores with freezing facilities:
   - Nassriayh: ??
   - Thi-Qar: ??
   - Basra: 5 stores (capacity 100 –200 tones)
   - Baghdad: many capacity unknown
2. Trucks with freezing capacity in:
   - Nassriayh: 7 trucks
   - Thi-Qar: 11 trucks
   - Basrah: 33 trucks
3. Shops with freezing capacity in:
   - Nassriayh: more than 15 shops
   - Thi-Qar: more than 26 shops
   - Basra: more than 40 shops

The above figures show that the freezing capacity in Nassriayh is very small or non existent and in Basrah it is limited.

Assistance has been requested for better preservation methods. One solution could be to supply generators to secure the electricity supply. By icing the fish immediately after they are brought in to the harbour would help the fisher-men to improve preservation. It might also increase the price some what.

Project proposal

The project aim at improved preservation of the catch by gutting the fish at landing and improve transport.
The project will assist the beneficiaries in defining improved gutting and transport methods.

Investments:

Foreign:	
Basic equipment e.g. thermo boxes, gutting tables (to be specified)	10,000 USD
Training and operation 1 year:	10,000 USD
Total	*20.000 USD*
Local:	
Building: 50m2x200000/m2	7,000 USD

Gutting tables:	800 USD
Knifes etc	500 USD
Water-tank:	900 USD
Electrical installations	2.000USD
Connection to water point	1.500 USD
Sewage	2.000 USD
Total local investments	*14,700 USD*
Training and operation year 2 and 3:	10,000 USD
Total local costs:	24.700 USD
Total costs to be born by the project in year 1	***34.700USD***

The consultants have been informed that an association could be given an existing building by the MOA free of charge this has to be verified. In the above calculation it is assumed that a small new simple building for gutting and packing shall be constructed. There will not be any active cooling or insulated cooling rooms.

Assumptions:

Justification for Supporting Fish Processing
The main reasons for supporting this project are:

- To improve prices paid to fisher-men in the peak season by improved preservation of the fish.
- To improve out of season supply to neighbouring Governorates.
- To create local employment
- To improve the income and living conditions of the fishermen in the area; which in turn could improve fishing methods and decrease over fishing.

Beneficiaries
- Small fishermen
- IDP women as workers in the plant.
- Unemployed women and women being head of house-holds

A total of 30 beneficiaries will be trained the first year of which 20 is expected to graduate and establish own business. In the subsequent 2 years, local project costs cover training for 60 persons. During this phase, it is anticipated that 40 beneficiaries will complete their training hence the total number of graduates reach 60.

Location
Beneficiaries should be selected from the district of Chibayish, Suq ash Shuyukh and Nassiriyah.. The fishermen should establish 2 associations, which should take ownership of the demonstration plant.

Training
The Project management could themselves or in collaboration with NGOs train the members of associations in practical processing, packing, storage, business management and marketing of fish as well as the use of by-products as guts and general sanitary and hygiene.

The training and support over time should not be limited to fish processing but include broader management subjects, such as catch methods and maintenance of boats and equipment, environmental subjects, uniformity of the fish to be landed and general management.

Project inputs
- Training of Instructors
- Supply of part of a demonstration fish packing plant
- Part of the equipment SS gutting tables etc could be produced in the metal workshop in the training Centre in Nassriayh as part of the training

Recommendations
It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that fish cutting and cooling could be supported by the project.

Supplementary Data and information
The answers given by the NPC to the questions prepared by the consultants are shown in the following as background information.

Production, landing locations and prices for local and imported fish

This is a potentially promising activity, because there is a surplus raw-material in the summer period, which could be preserved. At present only a small part of the catch is turned into low value products; as dried fish for animal fodder.

Month	Quantity fish landed in Thi-Qar	Quantity landed in , Suq Al-Shoyokh	Quantity landed in Al-Chibayish	Price grade A , Suq Al-Shoyokh paied to fischerman	Price grade A Al-Chibayish paied to fischerman	Price grade B , Suq Al-Shoyokh paied to fischerman	Price grade B Al-Chibayish paied to fischerman	Price retail grade A in Nasiriayh	Price retail grade B in Nasiriayh	Price retail grade A in Basrah	Price retail grade B in Basrah
Jan	200 Tons	80 Tons	150 Tons	4000 ID/K	3.500 ID/K	1750 ID/K	1500 ID/K	5500 ID/K	2500 ID/K	6000 ID/K	3000 ID/K
Feb	150 Tons	50 Tons	150 Tons	4000 ID/K	3.500 ID/K	1750 ID/K	1500 ID/K	5500 ID/K	2500 ID/K	6000 ID/K	3000 ID/K
Mar	150 Tons	40 Tons	125 tons	3500 ID/K	3000 ID/K	1500 ID/K	1250 ID/K	5000 ID/K	2000 ID/K	5000 ID/K	2500 ID/K
Apr	175 Tons	50 tons	125 tones	3500 ID/K	3000 ID/K	1500 ID/K	1250 ID/K	5000 ID/K	2000ID/K	5000 ID/K	2000 ID/K
May	350 Tons	90 Tons	150 tons	3000 ID/K	3000 ID/K	1000 ID/K	1000 ID/K	4000 ID/K	1500 ID/K	4000 ID/K	1500 ID/K
Jun	350 tons	125 tons	150 ton	3000 ID/K	3000 ID/K	1000 ID/K	1000 ID/K	4000 ID/K	1500 ID/K	4000 ID/K	1500 ID/K
Jul	300 tons	130 tons	155 ton	3000 ID /K	2500 ID/K	1000 ID/K	1000 ID/K	4000 ID/K	1500 ID/K	4000 ID/K	1500 ID/K
Aug	275 tons	125 tons	125 ton	3000 ID /K	3500 ID/K	1000 ID/K	1000 ID/K	4000 ID/K	1500 ID/K	4000 ID/K	1500 ID/K
Sep	275 tons	100 tons	115 tons	3500 ID /K	3000 ID/K	1250 ID/K	1250 ID/K	4500 ID/K	1750 ID/K	4500 ID/K	2000 ID/K
Okt	235 tons	80 tons	115 tons	4000 ID/K	3.500 ID/K	1500 ID/K	1250 ID/K	5000 ID/K	2000 ID/K	5500 ID/K	2500 ID/K
Nov	270 tons	80 t0ns	110 tons	4000 ID /K	3.500 ID/K	1750 ID/K	1500 ID/K	5500 ID/K	2250 ID/K	5750 ID/K	2750 ID/K
Dec	210 tons	75 tons	110 tons	4000 ID /K	3.500 ID/K	2000 ID/K	1500 ID/K	5500 ID/K	2500 ID/K	6000 ID/K	3000 ID/K

NOTES : 1 - The land of marsh in Thi-Qar is about 900 000 Donum, the fishermen in this wide areas sold the fish directly to merchants
2 - There exists no official office, agency, association or log book to check the amount of fishes caught
3 - Some merchants transport the fish directly to Baghdad and other governorates
4 - There aren't any documents, log book to lists the exact amount of fishes in Nasiriyah, Suq Al-Shoyokh and Al-Chibayish
5 - The quantities fish landed from Jan to May are for year 2005, while from Jun to Dec are for year 2004
6 - The fish gutting is illegal from 15th of Feb to 15th April (as a law) duo to generation period

Month	Imported Quantity from e.g. Iran fresh	Imported Quantity from e.g. Iran frozen	Retail price in Basrah fresh imported fish grade A	Retail price in Basrah fresh imported fish grade B	Retail price in Basrah frozen imported fish grade A	Retail price in Basrah frozen imported fish grade B	Quantity fish from the Gulf (see) sold in Nasiriayh	Retail price fish from the Gulf (see) sold in Nasiriayh	Quantity fish from the Gulf (see) sold in Basrah	Retail price fish from the Gulf (see) sold in Basrah
Jan	300 TONS	0	3500 ID/K	2000 ID/K	3,5—7 $	1.35-1.45 $	0	0	10 tons	11000 ID
Feb	300 TONS	0	3500 ID/K	2000 ID/K	3.5—7 $	1.35-1.45 $	0	0	20 tons	10 000 ID
Mar	250 TONS	0	3000 ID/K	1750 ID/K	3.5—7 $	1.35-1.45 $	0	0	45 tons	8000 ID
Apr	250 TONS	0	3000 ID/K	1750 ID/K	3—6.5 $	1.20-1.30 $	0	0	70 tons	6000 ID
May	200 TONS	0	3000 ID/K	1750 ID/K	3—6.5 $	1.20-1.30 $	0	0	150 tons	5.500 ID
Jun	200 tons	0	3000 ID/K	1500 ID/K	3—6.5 $	1.20-1.30 $	0	0	165 tons	5.500 ID
Jul	175 tons	0	3000 ID/K	1500 ID/K	3—6,5 $	1.20- 1.30 $	0	0	170 tons	5.500 ID
Aug	175 tons	0	3000 ID/K	I500 ID/ K	3—6,5 $	1.20 – 1.30 $	0	0	160 tons	5.500 ID
Sep	200 tons	0	3000 ID/K	1500 ID/K	3—6,5 $	1.20 – 1.30 $	0	0	135 tons	8000 ID
Okt	225 tons	0	3250 ID/K	1750 ID/K	3,5—7 $	1.30- 1.40 $	0	0	70 tons	10 000 ID
Nov	250 tons	0	3500 ID/K	2000 ID/K	3.5 –7 $	1.35 – 1.45 $	0	0	50 tons	11 000 ID
Dec	275 tons	0	3500 ID/K	2000 ID/K	3.5—7 $	1.35 – 1.45 $	0	0	20 tons	11000 ID

NOTES 1- The borders of Iraq are not under complete control so high quantities of fishes may be illegally imported to the country
2- There exist no documents, lists or log book describing the amount of Gulf fishes caught

3.10 Bee Keeping

Background
There is no or only very limited beekeeping in Thi-Qar to day. However, in other parts of Iraq and in many Middle Eastern countries with similar natural conditions bee keeping is well established.

Bees are not particularly choosy regarding pollen and nectar and can produce honey from a surprising range of plants even in arid regions. However, their forage may not be plentiful at all seasons, and bee-keepers might have to supplement their diet with sugar. Water also has to be available at all times. This is essential for their health and honey-making capacity.

There are many types of hives. In Europe cube type hives are the most common. In some Middle Eastern countries clay pipes or long wooden tube are used. This type of hives can consist of 10-100 hives, stacked 3-4rows high on a stand.

Justification for Supporting Bee Keeping
Beekeeping is well suited for landless poor persons to generate a supplementary cash income and as a mean to improve food security.

Beneficiaries
- Landless IDP
- Landless women and women heads of households in rural areas

Location
Beneficiaries should be selected from all 5 districts: Chibayish, Nassriayh, Refai, Shatra, Suq ash Shuyukh. The reasons for choosing all districts is the existence of vegetable and perennial crops in all districts, hence a source of raw-material through out the Governorate

Training
The beneficiaries should receive practical training in bee keeping, honey slinging packing, marketing and simple business management.
Upon completion of the training, the beekeepers should receive a set of hives and tools made by the carpenters trained in woodwork and a few colonies of bees at a subsidised rat. The payment of 50 percent should be given as a loan and paid back to the centre over a period of 5 years. The proceeds should be used for promotion of the dairy industry and training and support activities of the centre.

Associations/Cottage Industry Facility Centres
Two associations will be established to assist the members with services in buying inputs and in selling the honey. The honey producers association could together with other producer associations form CIFC in the relevant districts.

Project inputs
- Training of Instructors
- FAO should supply technical instructions regarding the best suitable equipment for beekeeping in the Districts and with vegetation similar to Thi-Qar
- Supply of some sets of: Hives, centrifuges, protective clothing etc to the MOLSA training centre in Nassriayh to be used as models for reproduction during the training course for woodworkers and metalworkers. Protective closing should be produced by the

beneficiaries receiving sowing machines.

- Supply of material for the production of hives, centrifuges, protective clothing and other items for bee keeping.
- Part of the equipment should be produced in the wood and metal workshop in the training centre in Nassriayh.

Project Costs

Foreign (project) costs:

• Tools for woodwork training (incl. in carpenter training)	
• 12 sets of hives and implements, 2 for the training centre and 10 for the associations	6.600 USD
• 100 bee colonies suitable for the area (estimate)	50.000 USD
• 100 sets hives etc. to be bought from Trainees (estimates)	27.500 USD
Total foreign costs:	*73,100 USD*

Local (estimated project) costs for the District Centers:

• Consumable material for the training courses	5,000 USD
• NGO instructors (20 training sessions of 2 weeks)	2,000 USD
• Training material: manuals, design etc.	300 USD
• Contribution to overhead costs for the district centre	4,000 USD
Total local training costs:	*11,300 USD*

Local (estimated project) costs for 2 year:	22,600 USD
Total Project costs (2 years):	**94,200 USD**

Total costs to be born by the project in year 1	***84.400USD***

Total Financial Project Benefits (2 years)	**80,000 USD**

Financial benefits over 2 years:

• 200 persons with 4 hives each producing 15kg each of 5000ID/ kg per year	60,000,000 ID
Total financial benefits 2 years	120,000,000 ID
Equivalent to 80,000 USD.	

Assumptions:

- 10 persons per class (training course)
- 20 courses per year
- Training is run for 2 years
- Total number of beneficiaries is 240 persons.
- 200 of the trained beneficiaries graduate and establish themselves with own beehives
- A retail price of 10.000ID/kg is used. The income of 5000ID per kg is a net price after reducing the price of 1.5 kg sugar (1100ID), a retail margin of 30% and other costs for glasses lids etc.

Recommendations

Pending a positive assessment by FAO/MOA regarding climate and vegetation it is *recommended*, that the project supply equipment for beekeeping to be used as models for reproduction in the training centre and later to be produced by the persons trained at the centre in Nassriayh. The project should buy 100 complete sets of equipment for beekeeping from the new established trainees and distribute them to the beneficiaries at subsidised prices.

3.11 Prefabricated Construction Panels from Reeds

This project is not included in the project costs for the following reasons:

- It has not been possible to get a local technical description of the required machines: Design, capacity, consumption etc.
- It has not been possible to identify foreign manufactures producing standard machines of this kind.
- The mission received conflicting information as to the existence of reed panel plants. Some said that no such plants were in operation at the moment. Others that there are a number of privately operated plants in Thi-Qar. If there are privately operated plants, the supply and demand has to be evaluated carefully in order not to disrupt the profitability of existing plants by introducing a "subsidised" plant.
- There is a plant in Basrah, which have 3 presses but has ceased to operate apparently due to lack of raw material. This should be investigated in more detail to find the precise reason for being out of order, and if this could be revived with the assistance of the project.
- Finally, the price of panels and the demand has to be compared to other construction materials.

Background
The consultants received a project proposal for the support for production of reed building panels. This needs a feasibility study, not yet carried out.

It was decided by the participants in the debriefing meeting that this activity should possibly be supported by the project pending a feasibility study and more information about machines and equipment needed, particularly the investigation of a local production of machines and equipment. HAP Consultants has prepared an outline for a feasibility study to be filled in by the NPC. At the time of submission of the project report information has still not been collected. It has therefor not been possible to finalise this particular study. The consultants *recommend* that a feasibility study is prepared before commencing any project activities.

The material received is attached beneath.

Justification for Supporting Prefabricated Construction Panels from Reeds
The raw material for reeds panels is available in large quantities. The only cost involved in the supply of raw material is the cost of labour for cutting. A reed panel plant would generate employment in areas where there is very limited job opportunities to day. The information received by the consultants are, however, not sufficient to evaluate the financial viability of such a plant.

The consultants were informed by the representatives of the Marsh Centre under the University of Nassriayh that there are several reed plants in the Chibayish area. Others say that the only plant is in the Basrah region. The later has been out of work for some time due to lack of raw material. This has been confirmed by the NPC. The number of plants in operation has to be clarified. Secondly, based on the information received from the Union of Agricultural Engineers the cost of reed panels came to the same as using traditional construction materials. Information of the durability of reed panels compared to traditional building material could not be obtained, apart from the statement received from the NPC that there is a school in operation since 1963 constructed by reed panels.

The consultants were informed that the workshops of the MOLSA training centre could produce the equipment provided they got details production drawings. It has not been possible for the Consultants to identify equipment suppliers. No end-user is identified. Existing plants are privately owned. Finally a new plant provided free of charge or at subsidised rates could give an unbalanced competition to existing once.

The project is interesting, but an in depth feasibility study is needed.

Beneficiaries
The main beneficiaries will be the persons living in the marshes who can make an income from cutting reeds and selling them to the processing unit. The current demand for reeds is not known

- IDP living in or near the marshes
- Unemployed Women and women heads of households in the marshy areas
- Fishermen and others living in or near the marshes.

Location
Beneficiaries should be selected in one of the two districts: Chibayish or Suq ash Shuyukh depending on the possible placement of a reed plant. Both locations are placed close to large areas of marsh. The final selection will depend on the financial analysis.

Training
The reed cutters should establish an association, which should take ownership of the demonstration plant. The District Centres should provide practical instruction and training in reed panel production, management and marketing.

Upon completion of the training the reed cutters should receive a set of machines and tools possibly made by the metal workshop in Nassriayh at a subsidised rat. The payment of 50% should be financed as a loan and paid back to the centre over a period of 5 years. The proceeds should be used for promotion of the training and support activities of the centre.

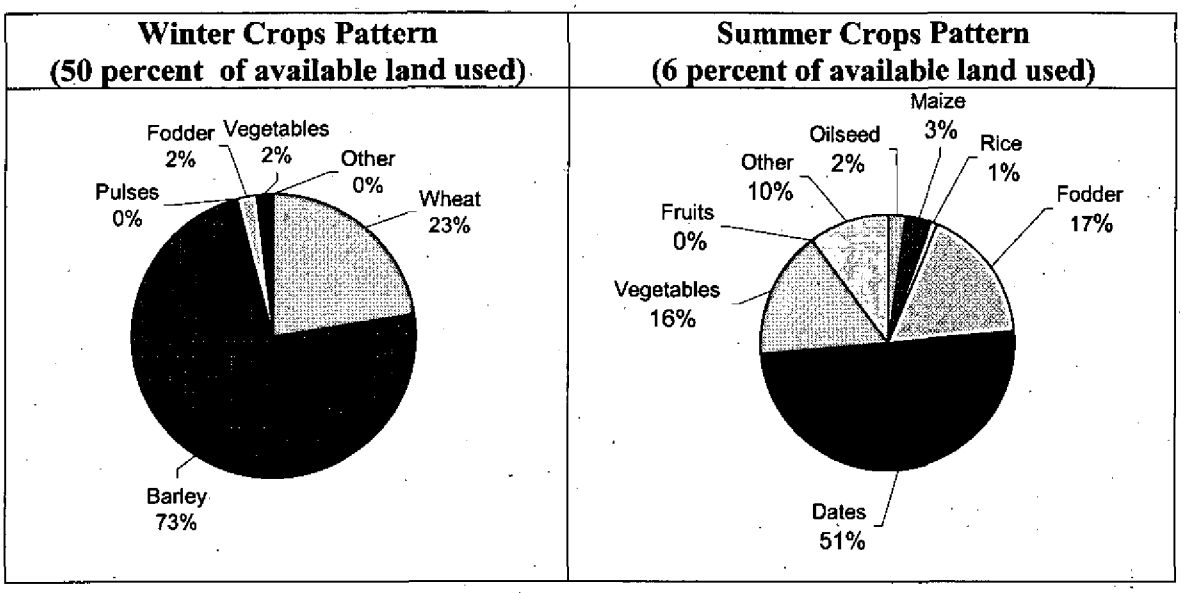
Project inputs
- Training of instructors
- Provide assistance, preferably design and key parts to the metal workshop in Nassriayh for the construction of a Reed Press. Possibly supply of hydraulic pistons and oil compressor engines as well as other key parts for the press

Recommendations
Pending a positive outcome of a feasibility study It is *recommended*, that the project supply key equipment for the production of the reed press. The machine should be produced in the training centre as part of the training of metal workers.
The final *recommendation* of this project awaits the completion of a feasibility study.

3.12 Vegetables Processing

Background

Although the area planted with vegetables in the summer and winter is more or less the same, vegetables counts only for 2% of the winter crops and 16% of the summer crops.



The following table shows the production per district. The figures are indicative only since they do not add up to the totals shown by other sources.

Vegetable Production

District	Chibayish	Nassriayh	Al Shatra	Suq ash Shuyukh	Al Refai
Summer vegetables ha/year	6	800	1500	150	2300
Winter vegetables ha/year	30	420	1500	150	1040
Production Summer vegetables t/year	34	4800	6000	3900	-
Production winter vegetables t/year	70	10080	12000	1731	-
Yield in ton/ha summer *	5,5	6,0	4,0	26,0	-
Yield in ton/ha winter *	2,0	12,0	9,0	12,0	-

(* Base don calculations made by HAP Consultants)

According to the information collected by the survey teams there is about 5,000 ha summer and 4,000 ha cultivated winter vegetables. There are great discrepancies in the yields per ha. given by the survey team and those calculated by HAP Consultants. The data in the above shown table are considered reasonable in line with the situation observed in the area except for Suq ash Shuyukh. The large differences shown above are mainly due to differences in the type of vegetables produced,

where tomatoes have considerable higher yields than e.g. garlic. The vegetable production increases north worth, with the largest area in the northern district of Refai. The average production per inhabitant in Thi-Qar is around 23 kg per year. For comparison, the consumption in Europe lies around 80 kg. The area planted with vegetables in 2002 was about 3,500 ha summer and winter. It therefore seams like the production of vegetables is increasing.

There is a vegetable processing unit in Al Garaf in Al Shatra district making preserved vegetables and pickles. In addition, there are individual households making pickles, marmalade and other types of preserved vegetables.

Justification for Supporting Vegetable Processing
The amount of vegetables produced is not sufficient to set up a mechanised processing plant. Productivity is low; prices for tomatoes are higher than e.g. in Basrah. So there is no justification for larger processing units.

Small homemade cottage industries could, however, be viable because they can be adjusted to the demand and produce quality products in the peak season to be sold in off seasons. This is not new in the area, but there is scope for improvement and expansion particularly for products produced under proper sanitary conditions. Many small producers do not fulfil even basic health requirements to day. They do not have the obligatory licence from the Ministry of Health, and the products are peddled in the streets without any control. With improved production conditions the products could enter retail shops and the demand for homemade local products increase.

Beneficiaries
- IDP
- Unemployed Women and women heads of households
- Small landless farming households

Location
Beneficiaries should be selected from: Nassriayh, Al Shatra and Refai. The vegetable production in Chibayish and Suq ash Shuyukh is too small to be feasible for processing.

Training
The beneficiaries should be trained in hygiene, production techniques, preservation techniques, quality control, and marketing and small business management.

Upon completion of the training the beneficiaries should receive a set of cooking vessels and tools which could be made by the metal workshop in Nassriayh at a subsidised rat. The payment should be financed as a loan and paid back to the Centres account with the Agricultural Bank over a period of 2 years. The proceeds should be used for promotion of the training and support activities of the centre.

Project Inputs
- Training of instructors
- FAO should supply technical instructions regarding the best suitable equipment for small vegetable processing methods and utensils.

- Supply of cooking vessels tools etc. This should be provided to the MOLSA training centre in Nassriayh to be used as models for reproduction during the training course for metal workers.
- Supply of material for the production of cooking vessels tools etc.
- Part of the equipment could be produced in the metal workshop in the training centre in Nassriayh, and a part could be produced by the newly established metal workers having undergone training and established new workshops in the area.

Project Costs

Foreign (project) costs:

• Tools for metalwork training (incl. in metalworker training)	
• 12 sets of simple cooking vessels and implements, for training purposes	2.400 USD
• 40 sets to be bought from Trainees (estimates)	4,000 USD
Total foreign costs:	*6,400 USD*

Local (estimated project) costs:

• Consumable material for the training courses	3,000 USD
• NGO instructors (20 training sessions of 2 weeks)	2,000 USD
• Training material: manuals, design etc.	300 USD
• Contribution to overhead costs for the district centre	4,000 USD
Total local training costs:	*9,300 USD*

Local (estimated project) costs for 2 year:	18,600 USD
Total Project costs (2 years):	**25,000 USD**

Total costs to be born by the project in year 1 ***15.700USD***

Total Financial Project Benefits (2 years):

Assumptions:

- 10 persons per class (training course)
- 5 courses per year
- Training is run for 2 years
- Total number of beneficiaries is 100 persons.
- 80 of the trained beneficiaries graduate and establish themselves with own processing shops.
- The Consultants have not received any information on vegetable processing. The following figures are best guestimates. A retail price of 1.400ID/kg is used. This correspond more or less to canned tomato paste The income (return to labour) of 400ID per kg is a net after reducing the sales price with: raw materials, energy, packing costs etc, a retail margin of 30% and other costs for glasses lids etc.

80 persons each producing 400 kg

of 400ID/ kg per year	12,800,000 ID
Total financial benefits 2 years	25,600,000 ID
Equivalent to 17,066 USD	

Financial Viability

Although the costs seem to outweigh the benefits, this would be changed if 3 years benefits are used instead of 2. It is therefore safe to assume that the activity is financially viable. The repayment of the beneficiaries 50% should be minimum 2 years in order to generate some surplus cash.

Recommendations

It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that training of beneficiaries in vegetable processing should be supported by the project

3.13 Date Packing

Background

There are very limited processing of dates in Thi-Qar. The main activities carried out by the date producers are cleaning of dates and packing in bulk. Dates are packed in 10 to15 kg baskets, on the cloves or loos in jute or other kind of bags.

Most dates are sold to traders buying the dates directly in the villages. Some producers transport the dates to nearby markets and sell both to consumers and to traders. Previously, Iraq had a large export of different kinds of dates many of which were in consumer packed. Today, most of the dates for export is bought in bulk by traders transporting them to the Golf states, where they are processed, packed and shipped.

According to information received from the district authorities the two main date producing areas in Thi-Qar are:

- Nassriayh 4,900t. per year
- Suq ash Shuyukh 19,600t. per year

The total production is calculated to around 42.000t per year after own consumption. There is production of dates in the other three districts, but the amount is much smaller.

Justification for Supporting the Project
Dates are an important agricultural product in Thi-Qar, both as part of the local diet and as a cash crop. By proper handling, storage and packing:

- Value will be added benefiting the producers
- Local employment will be generated

The date packing associations can at a later stage take up production of other date products such as date juice, date paste for fillings in confectionary etc.

Type of packing to be selected
A large variety of consumer packing exists: Glove boxes, trays wrapped in stretch film, small plastic containers, pressed dates in plastic bags.

The selection of packing method depends on the type of dates produced and the market, local or export as well as local available packing material. Local expertise has to be consulted to find the optimal packing mix. The equipment to be supplied by the project is general equipment which has general usage. All cleaning, sorting, packing is assumed to be manual.

Beneficiaries
- Date producers
- IDP women.
- Unemployed women and women being head of house-holds

The date producers should be assisted and encourage to enter into a cooperation where they at the village level jointly set up and manage a date storage, and packing centre. It is important to involve the producers to secure a regular supply of dates to the packing unit. A packing unit operated without the participation of the producers risk to be circumvented by traders offering better conditions, credits etc. for a time to stop the village activity.

Location

8 packing units should be set up with the assistance of the project. 4 locations should be selected in each of the 2 main date producing districts: Nassriayh and Suq ash Shuyukh. Locations with many targeted beneficiaries should be selected by the local project representative and the local authorities. Villages with a high proportion of quality dates and with electric supply should be selected. It is important that the dates are quality dates with a high value because these have the highest commercial margin and are best suited for sale in other regions of Iraq and possibly exports.

Buildings

It is assumed that the producer associations themselves find suitable premises for the packing activities, alternatively that the district authorities grant a building to the association. This is a common practice in the area, and in many cases the local authorities have expressed their willingness to assist. It is assumed that costs of refurbishing the buildings are included in the project costs. 3.000USD have been included in the local project costs for utilities, tiling, painting and other necessary works to render the buildings in a good sanitary condition.

Training

The project management should themselves or in collaboration with NGOs arrange training of the beneficiaries in cleaning, storage, fumigation, sorting, packing, and marketing of dates as well as the use of by-products such as stems and kernels and general sanitary and hygiene as well as business management.

Upon completion of the training the date producers association should receive the ownership of a demonstration packing plant at a subsidised rat. The subsidy should be given as a loan and paid back to the centre over a period of 3 years. The proceeds should be used for promotion of the date industry and training and support activities of the centre.

Cottage Industry Facility Centres

The date producer associations can together with other associations set up CIFC in Nassriayh and Suq ash Shuyukh which could promote and support the produce of the associations.

Project Inputs

- Training of trainers
- Supply of, fumigators, vacuum packer, foil dispenser etc.
- Part of the equipment such as cleaning vessels, stainless steel packing tables could be produced in the metal workshop in the training centre in Nassriayh. The project should supply the material needed for this production.

Project Costs

Foreign (project) costs:

- 8 sets of equipment, 12,000 USD

- Stainless steel for tables etc 3,000 USD

Total foreign costs: *15,000 USD*

Local (estimated project) costs for 2 Districts:

Investments

- Refurbishing of existing buildings *24,000 USD*
- **Operating costs**
- NGO instructors 5,000 USD
- Training material: manuals, design etc. 300 USD
- Local Specialist consultation fees 4,000 USD

Local (estimated project) costs for 1 year: *9.300 USD*

Local (estimated project) costs for 3 year: 27.900 USD

Total Project costs (3 years): 42.900USD

Total costs to be born by the project in year 1 ***24.300USD***

Total Financial Benefits (3 years, specifications see below): 98.400USD

Assumptions:

- 250 palms per ha.
- 25 to 30 kg per palm
- Average of ,5 ha per farmer
- 30 farms per village
- Total production 75t per village or a total of 600t
- 8 villages supported by the program
- 50% of the production for own consumption.
- 37,5t packed over 6 month by 5 persons in 250g packages equal around 2.5 min/package.
- Gross margin after packing costs 100ID/kg. 20.000USD total or about 60.000USD for 3 years
- Employment 8 units x 5 persons x 6 months x 80,000ID/month equal 12,800USD. Direct benefits from employment for 3 year equal 38.400USD.
- Training is run for 3 years
- Total number of beneficiaries is 240 date producers of which 210 complete the training
- Employment created 5 per packing unit for 6 month a year.

Technical assistance

It is *recommended* that FAO provide assistance and design of final equipment to be supplied by the project. It is *recommended* that a local specialist consultant be engaged to advice on the best suited: date variety, packing methods, and marketing of the packed products.

Recommendations

It is *recommended*, that the project supply some of the equipment which is not possible to make in the metal workshop of the training centre. It is also *recommended* that material for the production of tables, cleaning vessels etc by the trainees in the training centre be supplied by the project.
It is *recommended* to support this activity, and it was decided by the participants in the debriefing meeting that training of beneficiaries in sowing should be supported by the project.

ANNEX 4

COTTAGE INDUSTRY PROJECTS *NOT* TO BE SUPPORTED

The cottage industries listed in the following are not considered feasible to support under the joint UNIDO/FAO project.

4.1 Leather Works

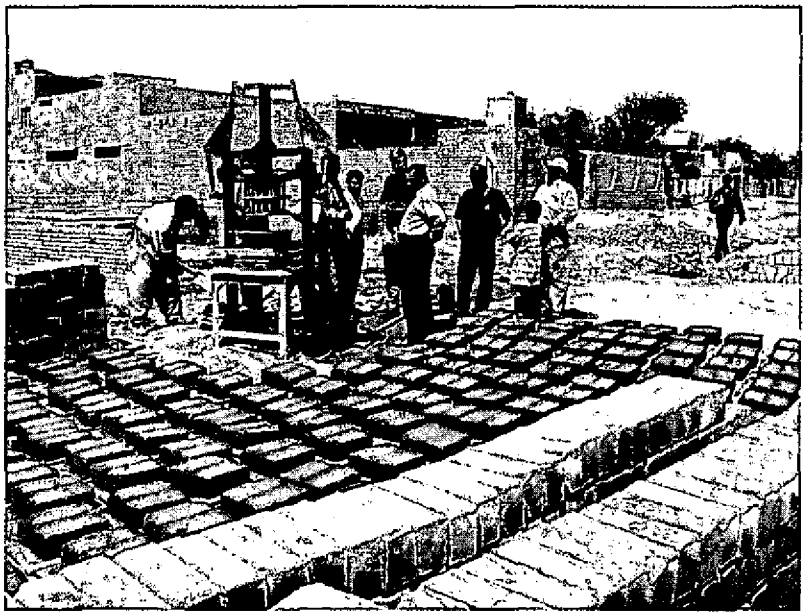
This activity will not be supported by the project. Some locally produced leatherwear such as shoes and sandals has a low demand in Iraq since considerable amounts of cheap products are imported. Nevertheless, it is *recommended* that the ministries concerned investigate the feasibility of developing this sector, since leather wears in other Arab countries is a thriving business.

Picture 16 – Cutting of materials for shoe making

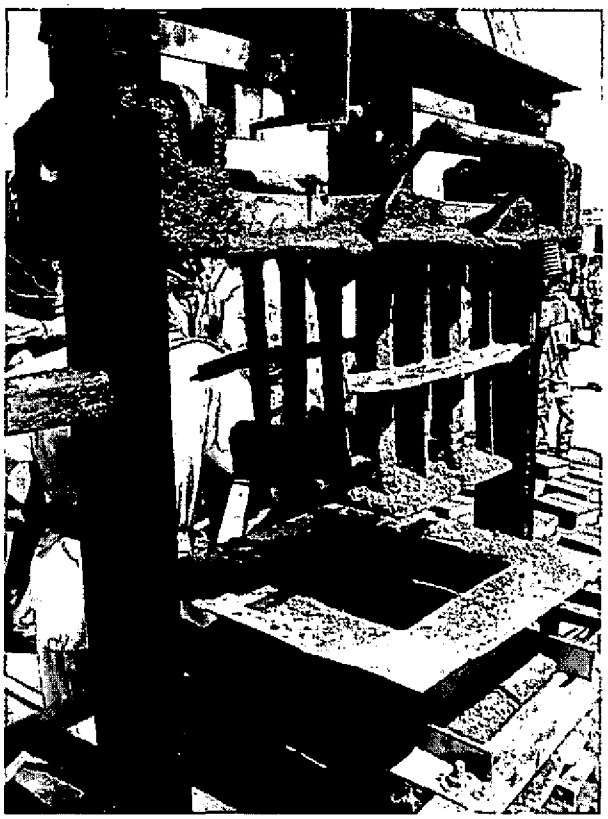
Picture 17 – Shoe making

4.2 Cement Blocks

The skills needed for production of cement blocks are already available throughout southern Iraq. Simple cement block making cottage industries exists and functions satisfactorily. There is no need for project assistance.



Picture 18 – One of many cement block making facilities in Al Shatra city



Picture 19 – Cement block pressing machine

4.3 Brick Making

There exist several brick-making factories through out the governorate and specialised skills are abundantly available. The traditional brick making uses clay cast in metal moulds and fired in a kerosene or wood kiln. The moulds and press are a simple fabricating activity. The production of clay bricks may be subject to bylaws relating to mineral extraction and burning of timber.

4.4 Construction of Wooden Boats

Construction skills are already available throughout the governorate. The main problem is the cost of quality wood. Hence, this activity will not be supported by the project.

4.5 Plastic Tunnels for Horticulture

This activity will not supported by the project since the technology is well known, but the Cottage Industry Support Centres in Chibayish and Suq ash Shuyukh should analyse the possibilities of sale of hops in neighbouring Governorates.

4.6 Hatcheries

Hatcheries are problematic. There are about 70 to 80 larger poultry farms in Thi-Qar producing approximately 5,000 chickens per production cycle of 60 days, or 6 batches per year. This would give a total requirement for day old chickens of 2,700,000 to 3 Mill per year incl. 20% mortality. To day the poultry farmers buy the day old chickens in Baghdad. The 300 to 400 km transport, in hot weather conditions is difficult for the survival of the day old chickens. The cost of day old chickens in Baghdad is 500ID per head.

A simple hatchery could possibly be built locally, although this requires precision and the combination of skills. A modern hatchery consists of:

- A stainless steel cabinet with doer
- Heating element with thermostat
- Humidifier with automatic control
- A mechanical turning mechanism of the egg trays.

In the Iraqi climate the hatchers should be placed in an air conditioned room and the fertilized eggs should be collected and kept in a cold store, before put into the Hatcher.

The production cycle could look as follows for the production of about 3 Mill. Day old chickens per year, which is the requirement of the 75 existing poultry farms in Thi-Qar.

Activity	5day period	5day period	5day period	5day period	5day period	5day period	5day period
Breeding Farm production	6000 eggs	6000 eggs	6000 eggs	6000 eggs	6000 eggs		
Cold-store	1200 to 6000 Eggs	1200 to 6000 eggs	1200 to 6000 Eggs	1200 to 6000 eggs	1200 to 6000 eggs		
1st batch		6000	6000				

Activity	5day period	5day period	5day period	5day period	5day period	5day period	5day period
Hatcher		Eggs	eggs				
2nd batch Hatchers			6000 Eggs	6000 eggs			
3rd batch Hatchers				6000 Eggs	6000 eggs		
4th batch Hatchers					6000 eggs	6000 eggs	
Day old Chickens 1st batch			5500 Eggs				
Sale to Farm 1			5500 Eggs				
Day old Chickens 2nd batch				5500 eggs			
Sale to Farm 2				5500 eggs			
Day old Chickens 3rd batch					5500 eggs		
Sale to Farm 3					5500 eggs		

The above table should illustrate 3 important factors:

- **Firstly breeding farm.** There should be a regular supply of fertilized eggs to the hatchery from 1 or more breeding farms. In the above example 1 breeding farm with 1200 layers must be present in the area near the Hatchery. To day there is no breeding/layer farms in Thi-Qar Governorate
- **Secondly planning of production**. There should be an integrated production planning of the breeding farm, the hatchery and the chicken producers. Preferably contracts between all three parties should be set up securing all parts in the production chain.
- **Thirdly size of hatchery.** The hatchery should have a certain size to be able to supply the required number of day old chickens for one farm. Farms practicing an "all in all out" system must get all the needed day old chickens in one day. If for example the capacity of the hatchery is only half of the above. It could only supply 2,750-day-old chickens in a five-day period, which is unacceptable for the farmers, who cannot fill the production area at the same time.

Further more in Baghdad there is a production of hatchers.

For these reasons it does not seams viable to start up a local production of hatcheries for the commercial poultry farmers, as proposed by the local counterparts. It could be possible to produce small simple hatchers for villages, having uneven numbers of chickens and where time does not matter so much. This will require a separate analysis.

It might, however, be a feasible project to set up a hatchery with imported hatchers. This will require a separate feasibility study.

4.7 Poultry Feed Mill for Nassiriyah

The supply of a feed mill is not recommended for the following main reasons:

- It has no spin of effect to the cottage industries
- It does not involve the target groups
- It is doubtful if it can produce at competitive prices. The cost calculation based on the raw material prices obtained in the province indicate that it will be more expensive to produce the fodder in Thi-Qar than to import it from Baghdad

4.7.1 Unstructured background data

The main reasons for requesting a feed mill producing poultry feed to be placed in Nassiriyah are that the commercial poultry producers have to bring feed from Baghdad. The cost of transport is high and regularity of supply not always secured.

Some raw material is grown in the area:

- Barley
- Wheat
- Some yellow maize
- Date residue
- And possibly some fish waste

It is possibly to buy protein rich sunflower cake, Soya etc. So with limited imports from other regions of Iraq it is possible to produce an adequate fodder for poultry.

At the moment the concentration and location of the commercial poultry farmers is not known. The best placement of a poultry feed mill will await this information.

The production is about 3 Mill Chickens per year in Thi-Qar with a live weight of 2 to 3 kg, and a fodder consumption of 3 to 3.5 kg. per kg. live-weight gain the yearly requirements will be in the order of 25,000 tons or 70 tons per day. Distances within Thi-Qar are not so large that two smaller mills would be feasible. The costs of such a mill could be in the order of 120, -140,000 USD if imported equipment would be used. The price of a locally produced one is not known, but mils are produced in Baghdad to day. Assuming, the cost of operation would be the same in Baghdad and in Thi-Qar. The main benefit would be the saved transport costs. Using a depreciation period of 10 years and 10 % maintenance costs, the costs to be offset by saved transport would be about 26,000 $ per year or 1.0 USD per ton product. The current cost of transport from Baghdad to Thi-Qar is about 300,000ID for a 10-ton truck. This gives a transport price of 30,000ID per ton or the equivalent of 16.5 USD per ton. This is fare superior to the cost of depreciation and maintenance. Even if the transport costs are halved it will be a profitable operation.

The cost of chicken fodder from Baghdad is reportedly 350,000ID/t. In the past most inputs to the agricultural sector were controlled and subsidised by the government. Under the Oil for Food Program an exceptionally large proportion of both cereals for human consumption and fodder were imported. To secure the poor and most needy this is still the case. It might therefore be that the poultry fodder produced in Baghdad is subsidised. It is unlikely that a balanced fodder with sufficient protein could be combined at competitive prices from the list below. The issue of fodder will have to be studied in more detail before a final conclusion can be reached.

Cost of raw material in Nassriayh at the market is:

Type	Price ID/ kg
Barley	240
Wheat	300
Maize yellow	500
Maize red	1250
Sunflower cake	1250

In addition there is the benefit for the region of increased employment of about 10 to 12 persons.

Since only one feed mil is planned it will not be feasible to plan a production in Thi-Qar.

4.8 Tomato Paste Production

The following section gives an outline of the tomato sector in the most southern governorate in Iraq namely Basrah. Even though the description does not directly deal with the production conditions in Thi Qar parallels can be drawn between the two governorates. Most importantly it must be stressed that the tomato production in Thi Qar faces much more difficult climate conditions, which influence the yield negatively.

It is not recommended to start up a tomato processing unit in Thi-Qar chiefly because the tomato production is too small and prices too high. This was discussed with the director of agriculture for the Thi-Qar governorate who agreed with this assessment of the situation.

The following presents a description of preliminary project identification for a tomato processing plant for Basrah. In case the southern part of Iraq should have a tomato processing plant it should be placed in Basrah having by fare the largest production of tomatoes in the southern region. The conclusion, however, is that at this point in time it is also not viable for the Basra region. The varieties are not for industrial, yields are too low, and prices too high to compete with foreign imports.

4.8.1 Introduction

Tomatoes constitute an important element in the Iraqi daily diet, consisting mainly of rice with a sauce in which tomato is an important ingredient.

The 3 main tomato producing Regions in Iraq is Central Baghdad, Basrah in the south and Kurdistan in the North.

The total tomato production in Iraq is estimated to 600 to 700,000 t per year. The Southern Region produces about 200,000 to 300,000 t in the winter season amounting to 70 % of the countries tomato consumption in this period. It is too hot in the summer season for tomato production in the south, where tomatoes are grown in the Central and Northern parts. In the summer period tomatoes are imported to the Southern Regions from other parts of Iraq.

The consumption of tomatoes produced in Iraq is estimated to about 27 kg per inhabitant per year. This is less than half compared to the European Mediterranean countries. Import of fresh tomatoes and tomato products chiefly tomato paste is not known. Dried tomatoes are

not produced in Iraq. They are not available in Thi-Qar and Basrah. It is not known if dried tomatoes are imported and sold in other parts of Iraq.

According to the information received, Iraq only produces tomatoes for consumption not industrial tomatoes. The yield is about 10 to 15 t per ha in the southern Governorates. Turkey, Israel and Iran are main producers of tomatoes in the region. All produces industrial tomatoes as well as tomatoes for consumption. In Israel for example 1,650 ha were planted in 2002 with industrial tomatoes yielding some 170,000 t or about 100 t per ha. This equals the yield in southern Spain of 80 to 120 t per ha of industrial tomatoes.

4.8.2 The tomato production in the Basrah Governorate

Tomato is the main agricultural crop in the Southern Region. It constitutes about 75% of all crops grown in the region, and represents a value of around 40,000,000,000 ID equivalent to 28 Mill USD.

There are about 9,000 farms with an average size of about 40 Donums (10 ha), owned by some 6,000 farmers, and occupy a labour force of about 40,000 persons. With family and dependences the total number of beneficiaries of a tomato-developing program is estimated to 80,000 persons.

There are about 25,000 ha planted with tomatoes yielding a total of about 250,000 t

Other crops are onions, garlic, eggplants, melons, watermelons and cucumbers some of which are inter cropped with the tomatoes.

In opposition to Thi Qar, the climate in the Basrah Region is favourable for tomato production in the winter season (November to April). In this period the climate is too cold in the more northern regions of Iraq for tomato production without the use of greenhouses. The production method used in the Basrah Region is more capital intensive compared to the ones used in the Central and Northern Regions. All tomatoes in the south are grown in plastic tunnels with drip irrigation with a fairly intensive use of fertilizer and pesticides. The soil is sandy and poor in nutrients. Ground water is slightly saline and the water table is at 10 to 30 meter. In the Central and Northern Regions tomatoes are grown without the use of plastic tunnels and without extensive use of inputs.

The 3 main towns in Basrah around which the tomato production takes place are: Az Zubayer, Safwan and Umm Qasr.

4.8.3 Current production situation

The tomato farmers use a 4-year rotation with ¼ of the available land for tomatoes, and 3/4 fallows. All used plastic tunnels and drip irrigation. The general impression was that the technology was appropriate, but management and the use of inputs are less than optimal. Yields are around 10 to 15 tons per ha and the quality is not stable. The main reasons being:

- Lack of use of seedlings
- Use of old varieties, and propagation of own seeds
- Less than optimal and unbalanced use of inputs
- No systematic preventive disease programmes (systematic spraying)
- Irrigation pipes are: leaking, not levelled, drippers clocked, causing uneven pressure in the system resulting in uneven amounts of water to the individual plants.

- Lack of use of early and late maturing varieties, which could increase the yield and even out the production over the season

Up to the last season the tomato farmers faced several problems:

- Input prices have increased much more rapidly than output prices.
- Lack of seasonal credit facilities
- Some inputs have not been available in sufficient quantity, or too expensive for the farmers to buy (pesticides, fertilizer, plastic cover for tunnels), resulting in more diseases, lower quality and production
- The private sector is still not sufficiently established and competitive enough to supply all
- Required inputs.
- No outlet for small and 2nd quality tomatoes to the canning factory in Kabala this year. This result in further depressed market prices because larger quantities of inferior quality reach the consumer market particularly in the Basrah area.
- No storage at the central tomato market, coursing the farmers to sell the tomatoes the same day they are brought to the market.
- Mobile telephones out of operation, which prevented many farmers to enquire about the market fluctuations and plan accordingly.

Some of these problems have for the season 2004/2005 improved. Output prices have increased and input prices have stagnated. The better farmers have been able to get access to seasonal credit; they start to use seedlings and better varieties. Mobile telephones work better although frequently out of service.

The cost of production was quoted to the equivalent of about 2000USD. The mission did not have the time to verify the cost and income figures. Compared to other countries total production costs of 2000USD per ha for a yield of 8-10 tons seems excessive. The cost of production in selected countries varies from 40 to 100 USD per ton.

4.8.4 Markets

Farmer's transport in average 4-500 kg tomatoes in plastic crates of about 30 kg on own or rented pickup trucks to a central wholesale tomato market placed outside Safwan. Traders are often owners and or truck drivers and buy directly from the farmers at the market. The traders transport the tomatoes to central Iraq and to the north where they sell directly to vendors and retailers. Larger towns do have wholesale vegetable markets.

There are apparently no major trading companies dominating the market and the price formation.

Vendors at local food markets sell most of the tomatoes, but some are sold in specialised green grosser shops in downtown and residential areas.

In the summer period tomatoes produced in the central and northern areas, are transported and sold in the south.

4.8.5 Producer Organisations

Under the past regime farmers were grouped into cooperatives under The Ministry of Agriculture. The function of the cooperatives was mainly to channel subsidised inputs to the farmers. The Ministry of Agriculture mainly covered the costs of operating the cooperatives.

To day most farmers in the Basrah Region are still grouped into cooperatives, but now the members, who pay a nominal membership fee, freely elect the administrative body of the cooperatives. The main functions of the cooperatives are still to supply inputs to its members, but to day input prices are not set by the government, prices are determined by the market, and the cooperatives use their collective bargaining power to secure the best input price for its members. The cooperatives charge a percentage to the members for the inputs supplied.

The members place orders for inputs with the co-operative and pay in advance. These transactions are recorded by the co-operatives both in its accounting system and in a book held by the farmer.

Farmers and cooperative leaders who were interviewed did not know if there was an agricultural policy being implemented for the tomato production. Previously input prices were subsidised this is not the case any more. The former Coalition Provisional Authority for the Southern Region (CPA-S) has provided assistance the cooperative societies for securing inputs.

Most of the farm owners are grouped in 5 tomato producing co-operative societies. The largest are:

- Az Zubair
- Safwan
- Umm Qasr

The 5 tomato producing societies are grouped in a regional co-operative union placed in Basrah, which is member of the national farmer's co-operative union in Baghdad. The co-operatives issue a newspaper for the members.

The co-operatives are legally registered societies, which hold deeds to land and buildings for administration and storage.
According to the general managers of the co-operatives these could all be owner of a cold store without changes in their statutes/by-laws. The same is true for a joint storage cooperative where all five societies were members.
Finally a foundation could be established as a self-governing organisation, receiving a grant for the initial investment costs, and using the revenue for tomato development purposes. It was not possible to verify if such a legal set up is possible under existing Iraqi laws.

The fee for using the storage paid by the farmers could be used for further investments to develop the tomato production, rent of machinery, transport etc.

4.8.6 Post Harvest Handling Of Tomatoes

Neither processing nor sorting, grading and storage facilities for tomatoes exist in the Basrah Region.

Persons interviewed in the Basrah Region are of the opinion that the tomato paste factory in Karbala has ceased to function. However, the mission did find tomato paste in the market of Basrah packed in glasses with the brand name of AL BUSTAN (being the trade mark of the Kabala factory). It was not possible due to time constraints to verify if the Karbala factory produces this or it comes from other factories produces the same brand.

There have not been any sales from the southern Region of tomatoes to the Karbala factory in the 2003-2004 seasons.

It was reported that FAO had financed and shipped a factory for tomato paste. This should still be packed in containers. This could not be verified.

4.8.7 Quality and grading

The quality, shape and size of the tomatoes vary considerably, partly due to the choice of variety and partly to the production method. Many farmers do not have sufficient funds to buy hybrid varieties. They produce own seed from varieties like "super melloman". This is an oval shaped tomato with undulating surface, and a meaty but somewhat bland taste. It is mostly used for cooking. The hybrids are firmer, round and have an even smooth surface, with a juicier, sweet taste with some acidity. Inputs and production methods are frequently not uniformly used, resulting in large size difference. The hybrids are sold at about 35 to 40 % higher prices than the local varieties.

Farmers make a rough sorting of the tomatoes at the farm according to variety, size and degree of damages. Retailers buy different varieties and different sizes according to demand. Most retailers display large good quality tomatoes, but tend to mix sizes when they pack the tomatoes to the clients.

Retailers in Basrah to day do not demand more uniform sizes and quality. It therefore does not seem viable to include sorting equipment for the tomatoes at this stage. The majority of the tomatoes are used for cooking, where appearance do not matter as much as for fresh consumption in salads etc. In case more tomatoes will be consumed fresh and in case export markets will be developed better sorting and grading equipment could be required. In this case manual or semi manual sorting tables could be a viable solution, where as fully automatic sorting tables with size and colour grading will not be appropriate because it requires more uniform tomatoes with less damaged and diseased tomatoes than produced to day.

4.8.9 Tomato paste production

It is not known if there is a tomato paste production in Iraq to day. The factory in Karbala is according to the cooperative societies not functioning.

Most of the tomato paste found on the market in Basrah was imported from Iran. All small shops do have tomato paste in 1kg cans, 450g cans and glasses and in 70g cans. The consumption is high, because tomato is used in most Iraqi dishes. The price of a 1 kg can of Iranian tomato paste in the Basrah general food market was found to be about 900 ID. The wholesale price was 700 ID per kg. This is a little lower than the current wholesale price of 0, 3 USD or 420 ID per LB in America.

In the Basrah area with a production of about 200-300,000 t per season there is about 8 to 10 percent poor quality tomatoes equivalent to 18 to 25,000 t. With a season of 120 days the average daily input to a processing line would be around 170 t per day or 10 t per hour if the plant were operated in 2 shifts.

It is possible to buy plants with such a capacity, but 10 t per hour is low compared to plants being installed to day. Most modern plants have a capacity of 60 t per hour and upwards.

The cost of equipment for an automatically operated plant with a capacity of 10 t per hour with:

- Washing tank
- Sorting conveyer
- Chopper
- Heater with automatic temp control
- Pulp and finisher
- Juice tank
- Evaporator
- Paste tank
- Sterilizer with automatic temp control
- Empty can sterilizer
- Can filler
- Automatic can sealer
- Cooler for filled cans

Could be around 1 Mio USD. To this comes auxiliary equipment, such as:

- Weighbridge
- Boiler
- Forklifts
- Labelling and packing equipment
- Possibly power generator
- Water treatment plant
- Cooling towers
- Water-reservoir or tank
- Can re-forming line
- Laboratory instruments

the costs of which will depend on the actual location and utility availability.

The plant will require a building, which is about 15 m wide and 60 m long with an average height of 6 m except for the evaporating tower, which need a height of about 12 m. In addition service buildings storage and offices will be required.

Total costs of a plant with a capacity of 10 t might come to about 2.4 to 3 Mio USD. This amount could be reduced by filling the paste in drums of say 100 l for intermediate storage, and using an existing canning factory to can the product in slack seasons. It is not known if such a possibility exists in Iraq to day. It will also be possible to reduce equipment costs by

filling the paste in glasses or plastic cups. The latter will require refrigeration but shelf life will be considerably reduced.

Physical inputs are estimated to:

- Tomatoes 10 t per hour
- Power 150 hp installed capacity
- Water 180 m3 per hour
- Steam 6,000 kg per hour
- Cans Depending on size and type

The number of personnel needed to operate the plant depends on two main factors:

- How the tomatoes are delivered to the plant. In bulk bins of 300-400 kg, or in crates of 30 kg. It is most likely that the tomatoes will be transported in crates of 30 kg requiring 5-6 persons.
- Washing, sorting and trimming. It is difficult to predict how many persons will be required because it depends on the quality of the fruits and the degree of strictness in sorting. It is estimated that 12 to 14 persons can handle 10 t per hour. But if all tomatoes are damaged and require trimmings the number could be 2 to 3 times higher. In case the quality is poor it might be necessary to have 2 sorting tables.

Management, technicians and general staff will be around 15 persons. To operate the plant in 2 shifts will require some 55 to 75 persons.

At a price of 100 ID per kg which reportedly is the lowest price paid to the farmer for 2nd quality tomatoes in Basrah during the peak of the season, the cost to the factory would be 71 US$ per ton for raw material. To this should be added transport costs of 100 to 200,000 ID per truckload of ca. 40 to 50 t. The total price to the factory could be about 75 USD per t. This is high compared to countries like China, Bulgaria etc. Industrial tomatoes are paid at around 40 to 50US$ per t in many countries around the world. One reason for this price difference is that the tomatoes grown in Basrah region are for consumption. It is not industrial tomatoes, and yields are lower. Still even for consumption tomatoes yields should be about 30 to 40 t per ha.

One of the main reasons for the cooperatives requesting a tomato-processing unit in Basrah is to use the 2nd grade tomatoes. To base a production of tomato paste on low quality tomatoes are financially doubtful because the quality of the product will be affected and the product will have difficulties competing in a market which is already very competitive. To show the importance of quality Annex 3.8 presents selected sections of the statues of the California Processing Tomato Advisory Board. The regulations are included here not as an example to follow rigidly, but as example showing the importance between quality of raw material and quality of the final product.

A processing plant can only succeed in a competitive market by:

1. Providing a product quality that not only meets the plant specifications, but also is consistent from batch to batch.
2. High quality fresh tomatoes;
3. Faster and gentler handling of fresh tomatoes from field to hot-break tank;

4. Good hot-break temperatures followed by lower evaporation and sterilization process temperatures;
5. Faster movement of product through the process, decreasing the time product is exposed to elevated temperatures, and;
6. Maximum blending of fresh tomato loads and product through a dedicated process line to equalize the naturally varying quality of incoming fresh tomatoes.

The first 2 points are difficult to comply with using low quality raw material. The 3rd point will be also be difficult to comply with because it all other equal will take time from harvest to delivery before a farmer has collected enough 2nd class tomatoes to fill a truck load. Planning of the supply of 2nd quality tomatoes is not possible. In periods there might be too many, and in others too few. This will affect the efficiency of the processing plant.

In case a tomato processing factory should be set up in Iraq it would be most feasible by handling tomatoes from all Iraq so the processing period could be as long as possible. Basrah is therefore not the ideal place for such a factory. A more suitable place will be the centre around Baghdad, which can receive tomatoes from all 3 tomato-producing regions of the country.

To secure a continuous operation of the plant it will be an advantage to produce more industrial type tomatoes with uniform size and shape and high dry matter content. This could be possible if yields are increased on the existing areas planted. If yields are doubled or tripled costs per unit would be lowered and possibly become more in line with world market prices. Part of the area could than be planted with industrial tomatoes to be used exclusively for the factory. These could than be mixed with the 2nd quality tomatoes produce for consumption.

Finally the authorities should prepare a policy for the tomato production, which for a period could protect local production.

4.9 Knitting

There is no commercial knitting to day in the Thi-Qar Governorate. The demand is small and the products would have to be marketed elsewhere in the country. It is doubtful if local wool can be spun fin and uniformly enough to be used for commercial knitting production. Finally the equipment is costly and requires electricity.
Based on these factors it is not recommended to support this activity.

4.9.1 Background data

Knitwear is imported and used in the urban areas in the cold winter period. Knitwear is not used in the rural areas. It does not have the same widespread usage as other types of cloth. In April knitwear was not found in the market, but when it is there it is all imported from China and Taiwan. In case knitwear should be produced it should probably be exported to other areas in the north, where it is widely used. Design and quality must be studied in debt to mach the demand in these areas. E.g. should it be thick hand spun and knitted types, or lighter finely spun machine knitted types? The current production in these areas must likewise be studied.

Another important factor is the wool price. To day it is low because the spinnery is out of operation, but once it starts wool prices will increase, and the comparative advantage, which

might exist to day, because there is a traditional stronger demand in the north for wool for carpets, knitwear etc. will be diminished.

The NGOs contacted by HAP Consultants did not engage in teaching the techniques of knitting.

It is HAP Consultants impression that to carry out a successful project in this field a strong NGO is needed. The NGO should be able to:

- Select the participants with a view to entrepreneurial skills and attitude
- Support and arrange the buying of wool in order to take advantage of collective bargaining power. Assist in selection of type, quality and design of material. In view of the competition and current import it is unlikely that individual participants in a foreseeable future can handle these functions themselves.
- Support and arrange the sale and marketing of the finished products.
- Possibly arrange contract work for customers in the north of Iraq.

It might be that 100 women with 50 standard pitch-knitting machines could find employment in making different knitwear in the Southern Governorates of Iraq. This estimate is not based on any systematic study of the demand. It is based on an assumption that most of the potential beneficiaries can work half day only, and therefore 2 women has to join together, or unemployed family members have to join in the operation of the knitting machine, so it can be operated a minimum of 8 hours per day. It is furthermore assumed that working about 8 hours per day they can finish e.g. one to two pieces per day, when all activities such as purchase of material, design, and selling are included. On a yearly basis this means about 400 pieces can be made. Totally this gives 20,000 pieces, which are judged possibly to be absorbed in the market of the southern region, and exported to the north. Over time this number can increase.
Costs of the intervention: 50 standard pitch-knitting machines of 550 dollars each, total 30,000 dollars.
The beneficiaries would be 100 poorer younger women, possibly female heads of households. This activity demands a somewhat more business like attitude, than the sewing described above.
There is no direct link between this intervention and the development of a local manufacturing industry of machines and equipment.

At an average sales price of 20,000 ID per piece the yearly turnover would be 8,000,000ID and with a margin of 50 % the return to labour would be 4,000,000ID. After depreciation of about 200,000ID per year, this would leave about 3,800,000ID, which is considered adequate compared to the official salaries of min 2,4MillID per year.

Retail and wholesale prices in the market for wool are:

	Wholesale	Resale
"Dusty" unwashed wool:	750ID/kg	900 to 1000ID/kg
Washed wool:	1000 to 12000ID/kg	1300 to 1500ID/kg

The price of spun wool is not known, but assuming that it increases 2 times it would be around 2,5 to 3,000ID per kg. Raw material will for 2 kg to a sweater incl. waste etc. come to

about 8,000ID. It is doubtful if it can be spun finely and uniformly enough to be used in knitting machines. This has to be investigated further.

ANNEX 5

AGRICULTURAL PRODUCTION IN THI QAR

The following section gives an overview of the agricultural production in Thi Qar governorate. The first part contains general agricultural data, where as the last part roughly illustrate the geographic location of the individual agricultural activities:

- Barley
- Wheat
- Buffaloes
- Dairy
- Dates
- Fish
- Maize
- Rice
- Sesame
- Sheep
- Vegetables
- Tomatoes

General Agricultural Data

The average farm in Thi-Qar looks like follows:

Average farm out of approx. 60.000 rural households in Thi-Qar:	**Average Use of Land And nos. of Livestock**
Land (ha)	5,7
Cultivating Winter Crops (ha)	2,9
Summer/Permanent Crops (ha)	0,35
Cows and Buffaloes	2,6
Sheep	7,7
Goats	1,5
Poultry	10

Total number of estimated livestock in the Governorate

Livestock	**Total Estimated in the Governorate**
Cows and Buffaloes	167 000
Sheep	494 000
Goats	119 000
Poultry	629 000

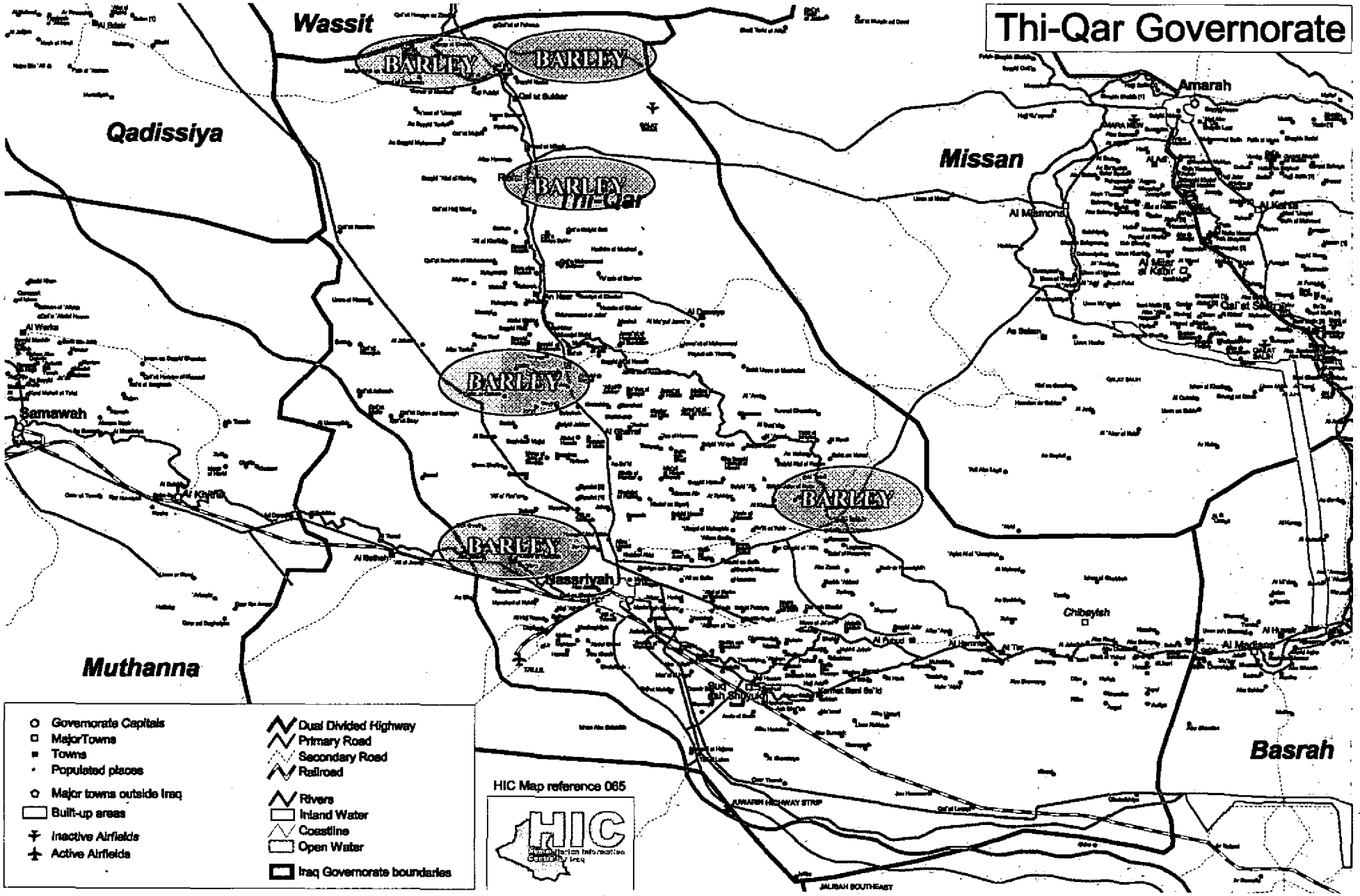
Total area cultivated with summer crops

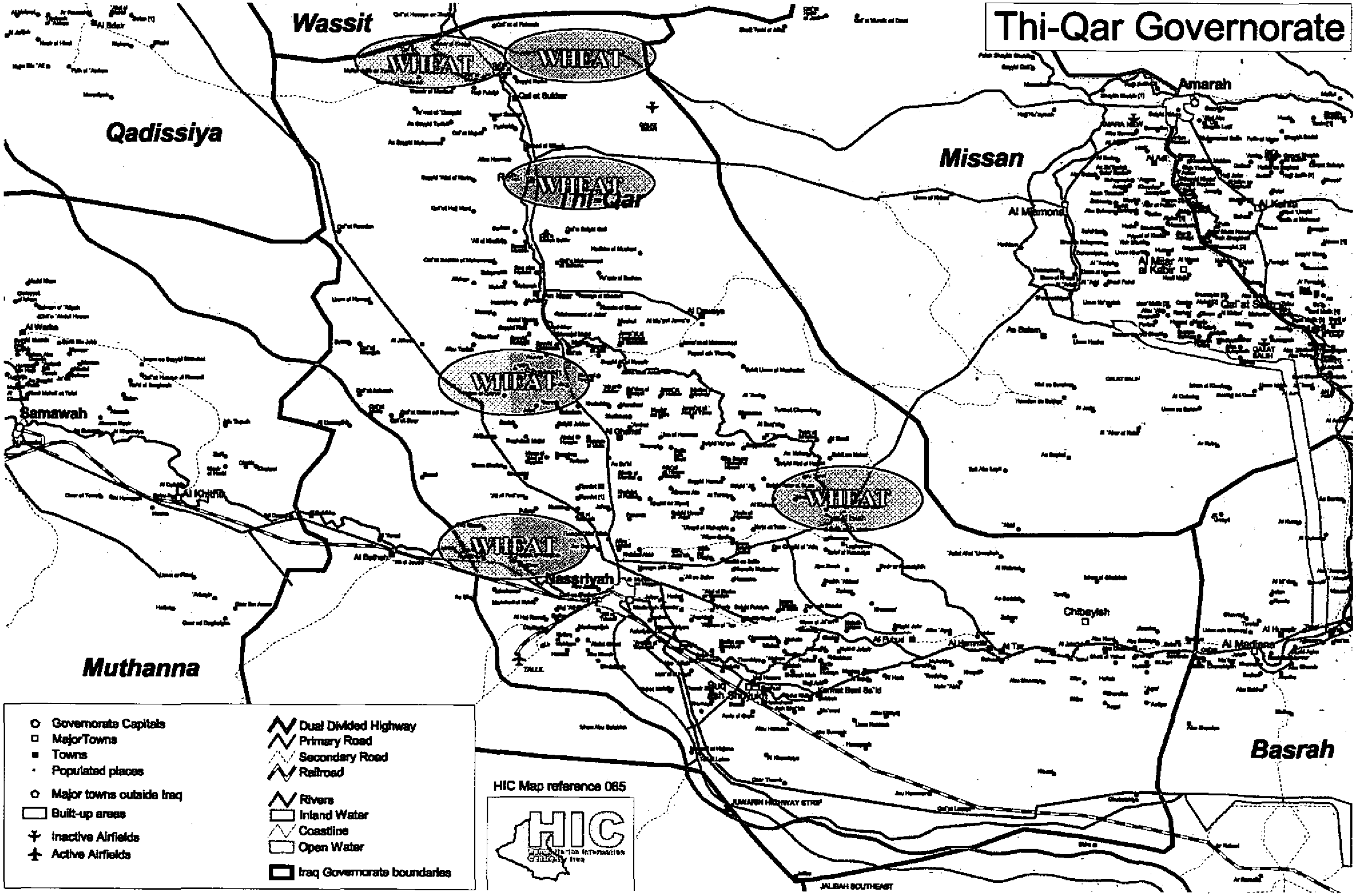
Crop	Ha Total 21.000 ha	Yield t/ha.	Total t. Production	Available (kg.) per inhabitant
Dates	10710	4	42840	29
Fodder	3570	8	28560	na
Vegetables	3360	3	10080	6,8
Others	2100			
Maize	660	3	1920	1,3
Oilseed	420	2	840	0,6
Rice	210	2,4	504	0,35
Fruits	0	0	0	0

Total area cultivated with winter crops

Crop	Ha Total 21.000 ha	Yield t/ha.	Total t. Production	Available (kg.) per inhabitant
Barley	126.406	0,6	75843	(50)
Wheat	39.827	1,5	59740	39
Vegetables	3463	3	10399	6,9
Fodder	3450	8	27600	na
Pulses	50	1,2	60	0
Others	0	0	0	0

Main Concentration of Agricultural Activities According to Geographical Location





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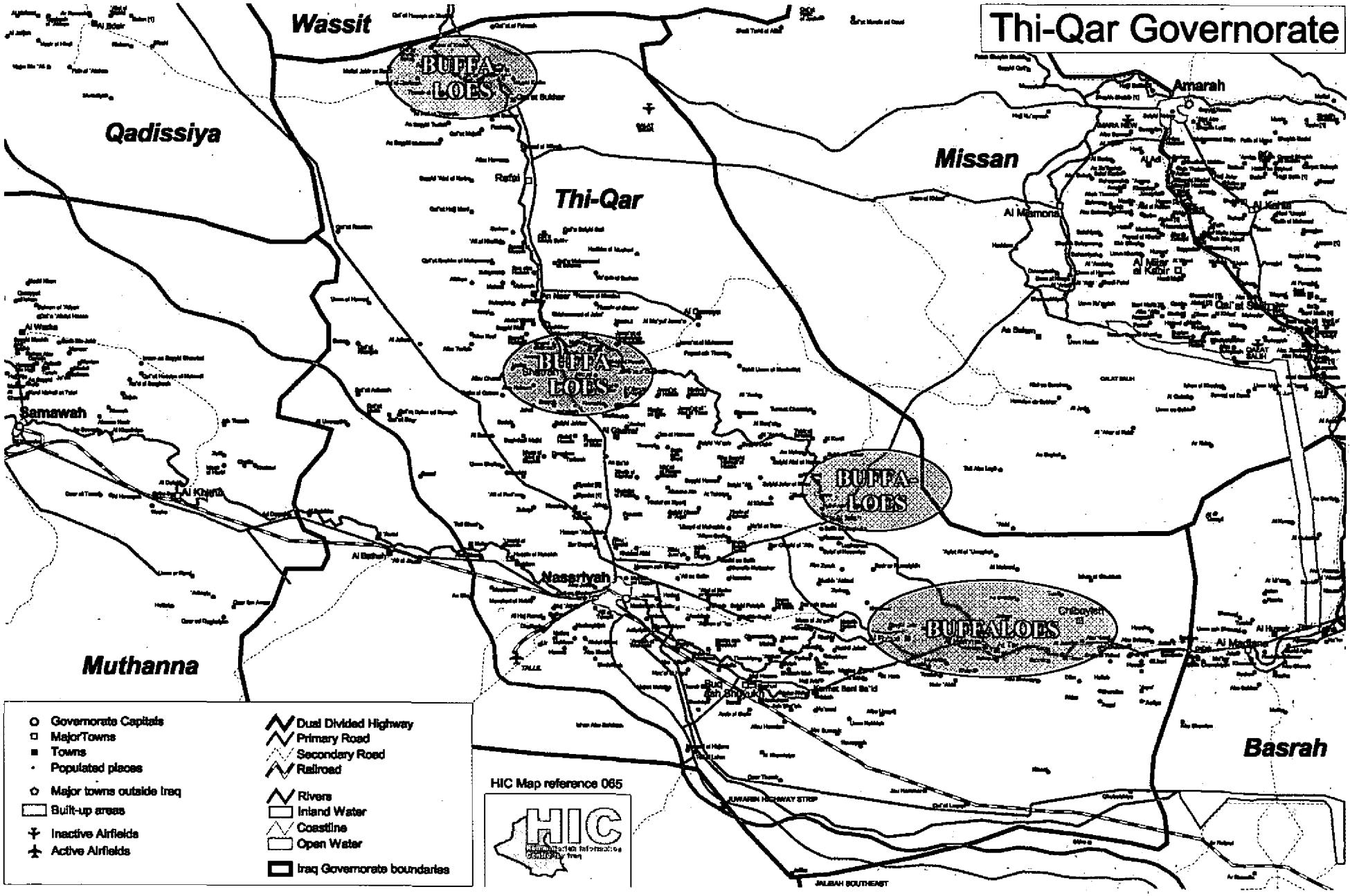
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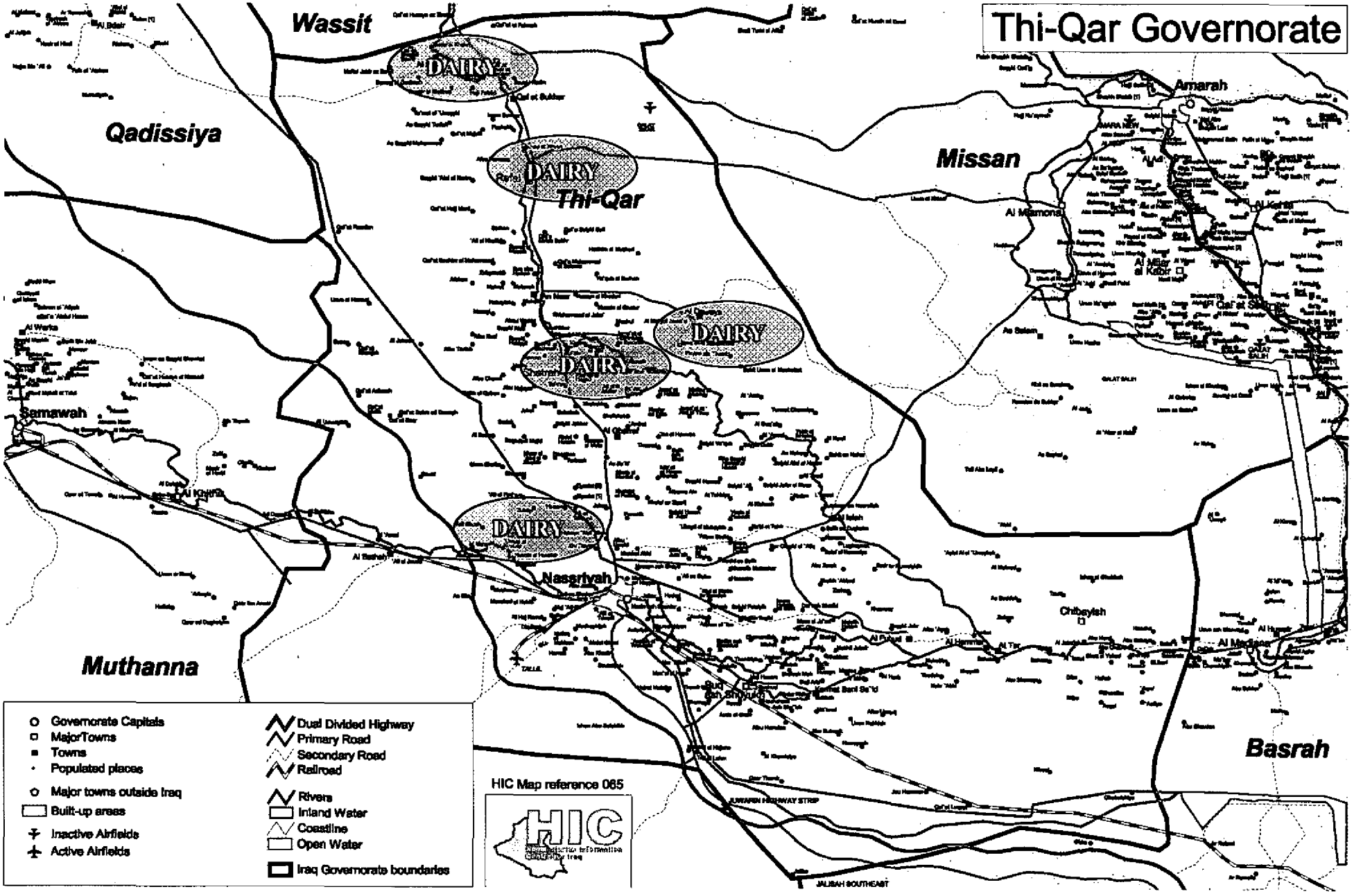
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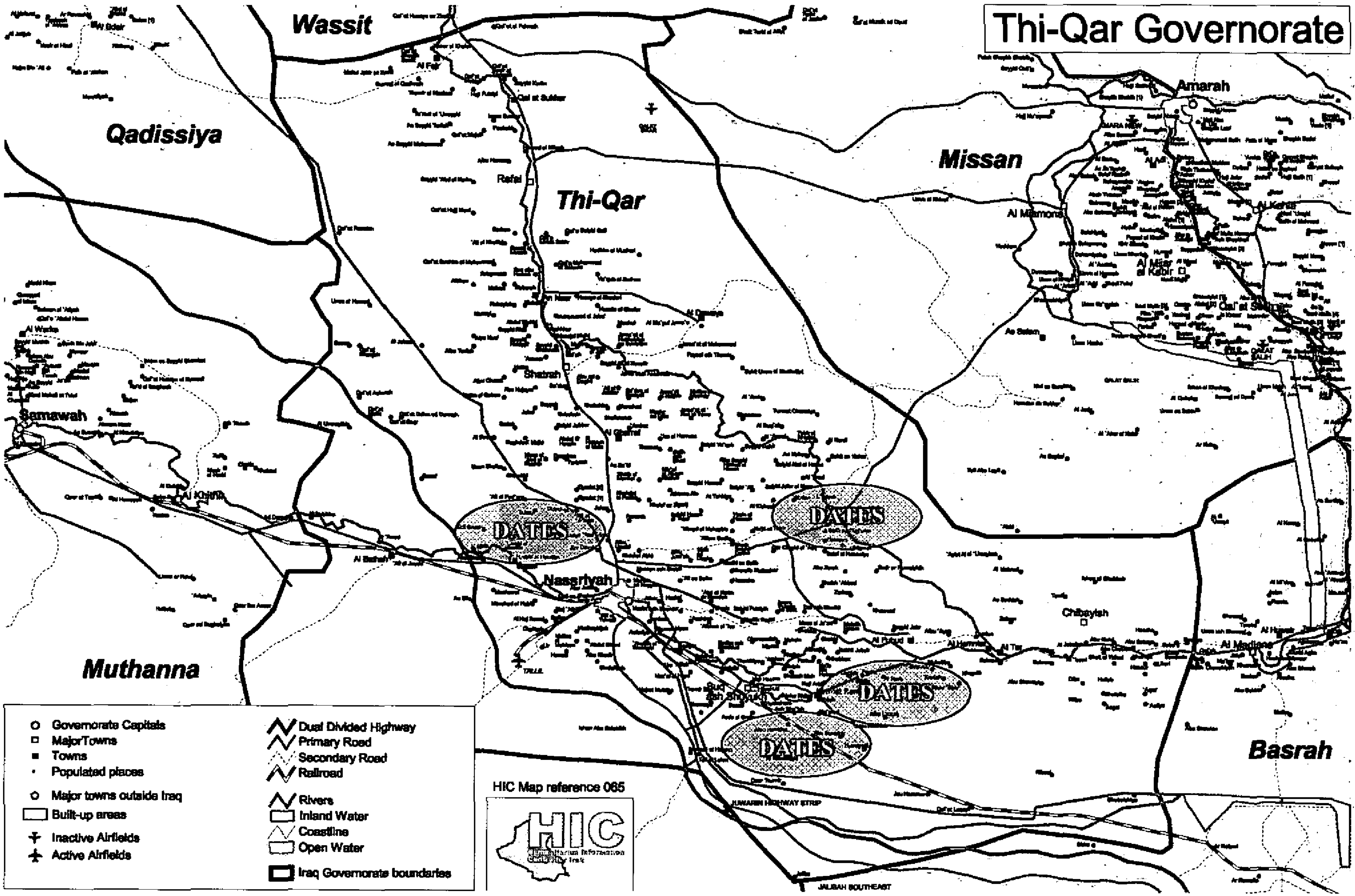

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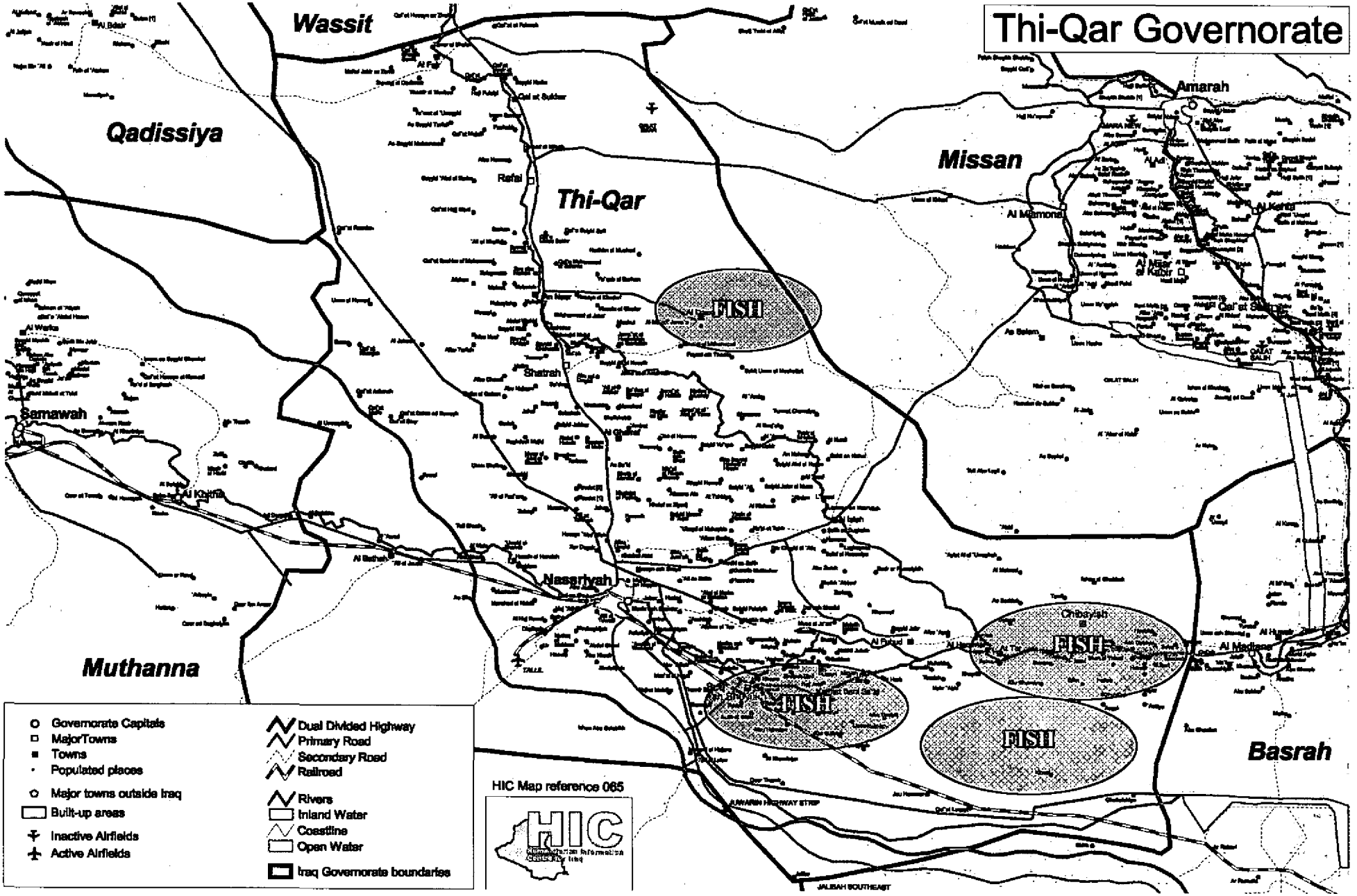
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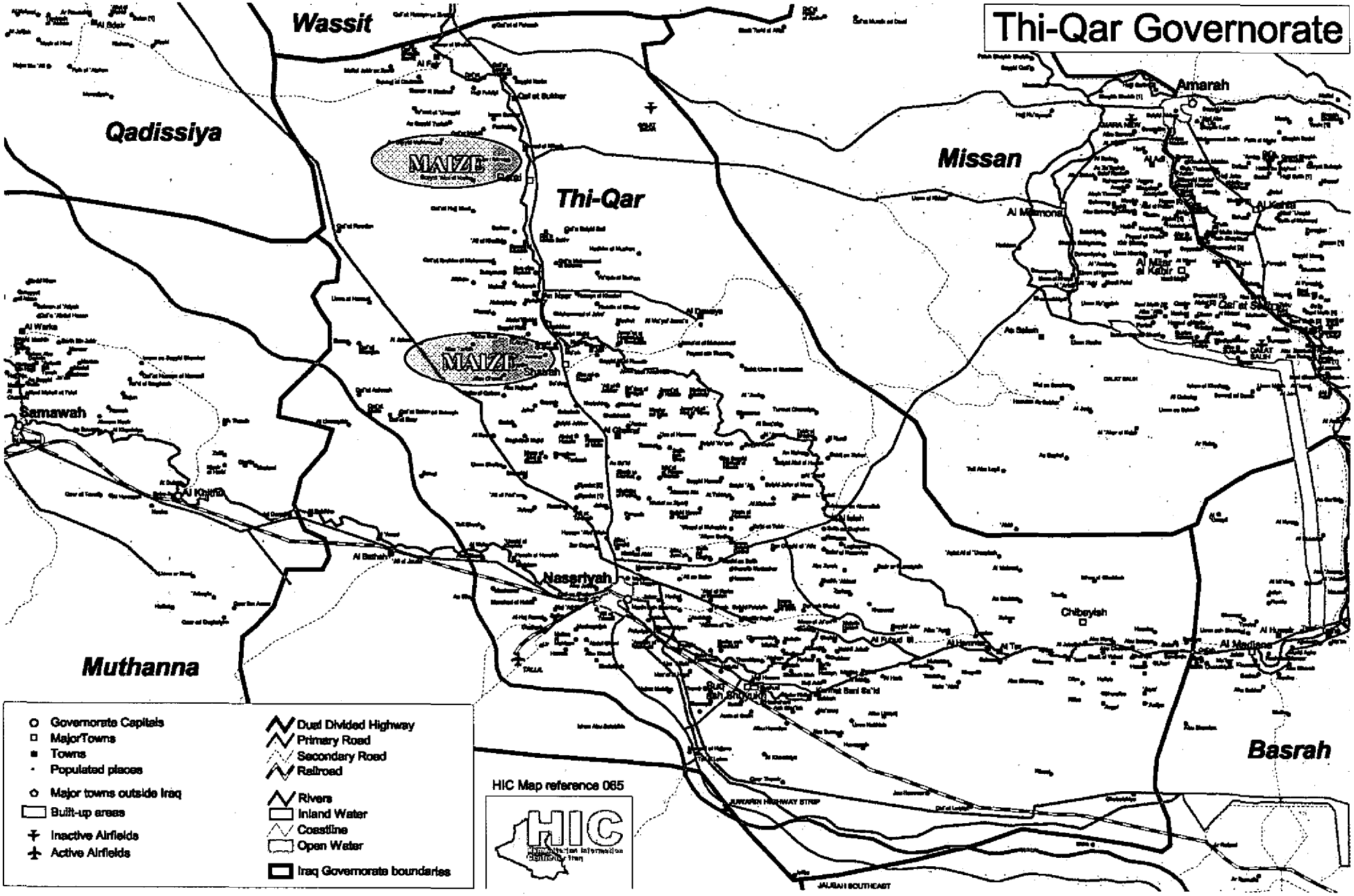
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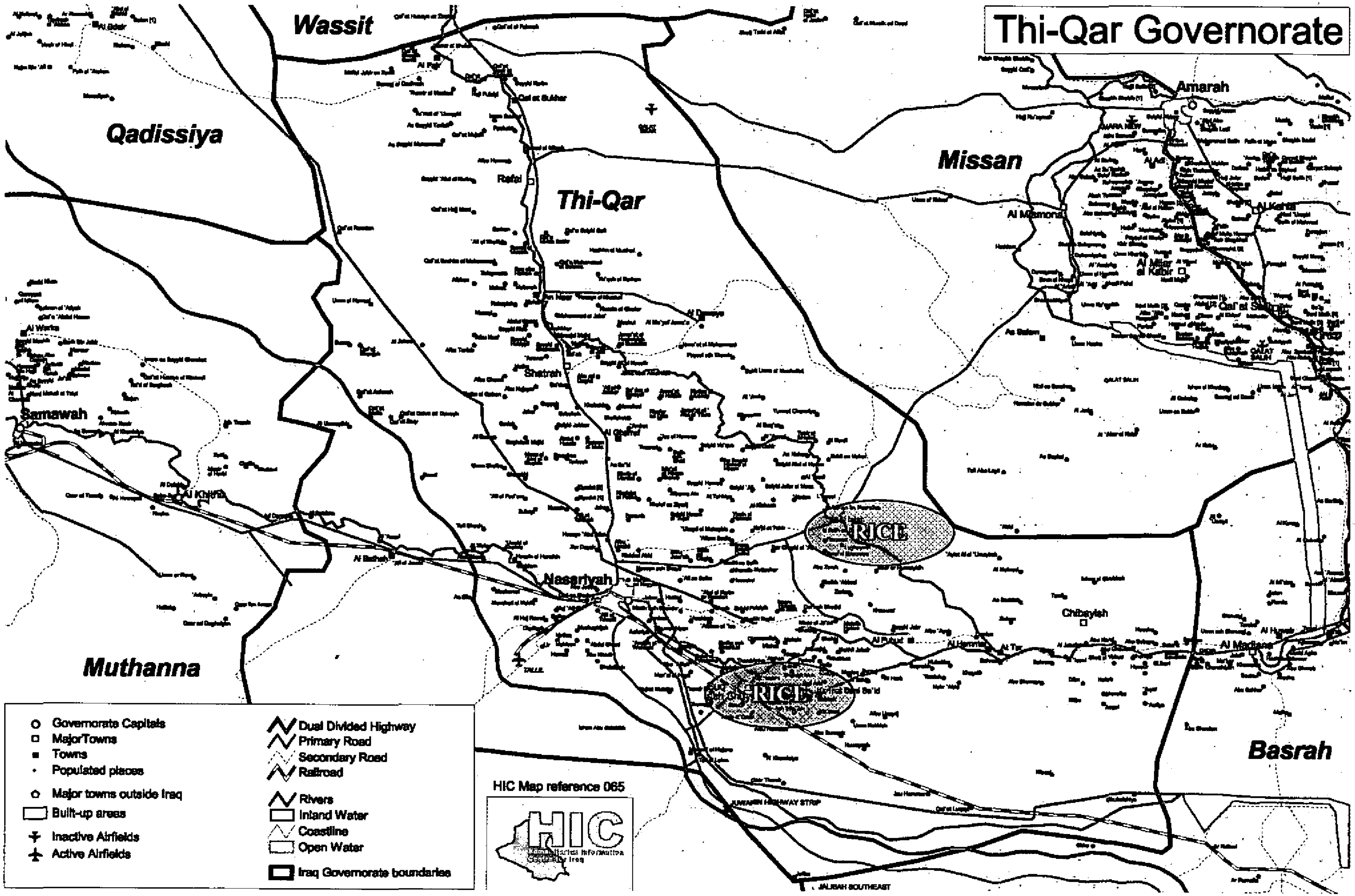

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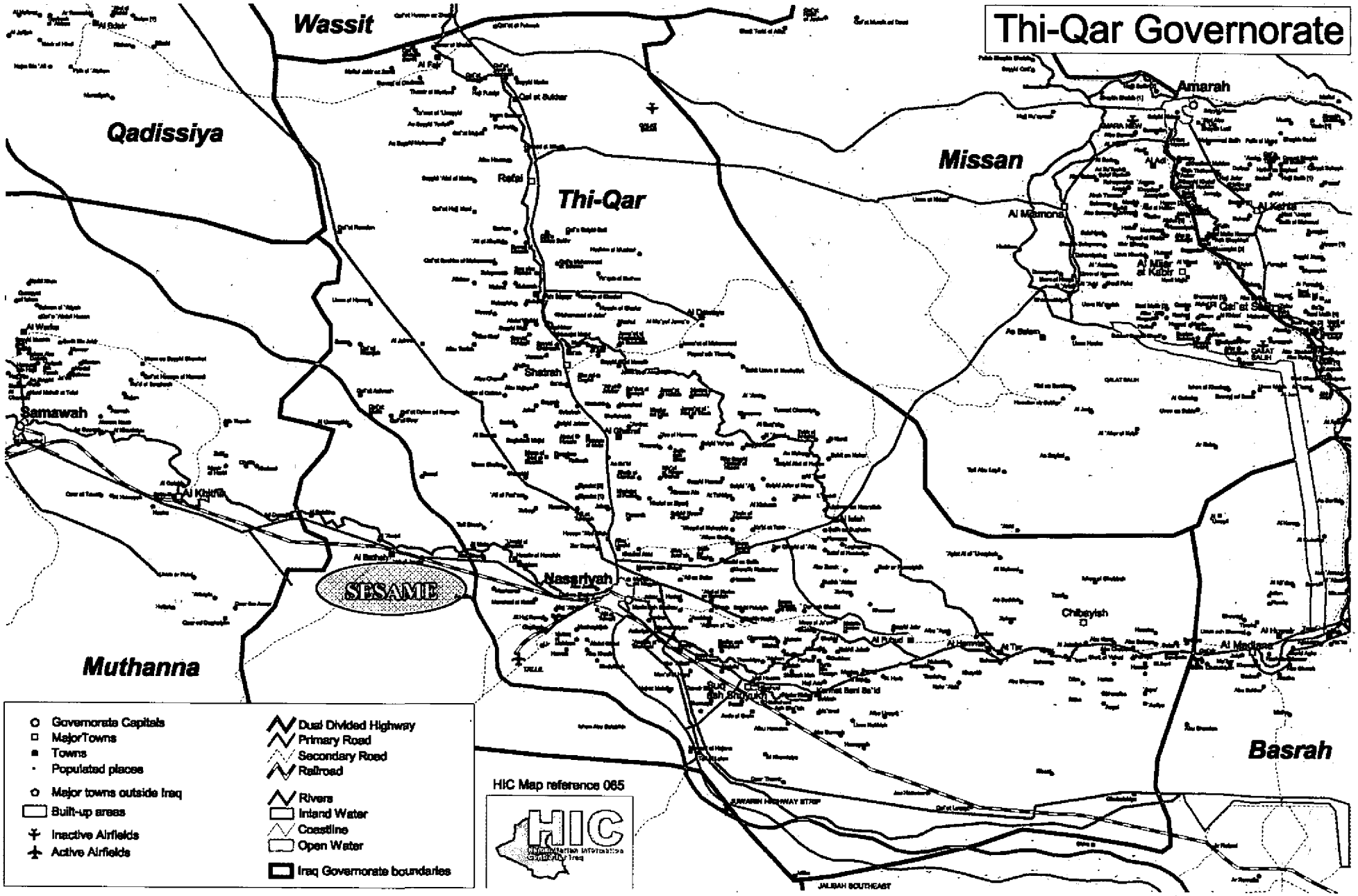
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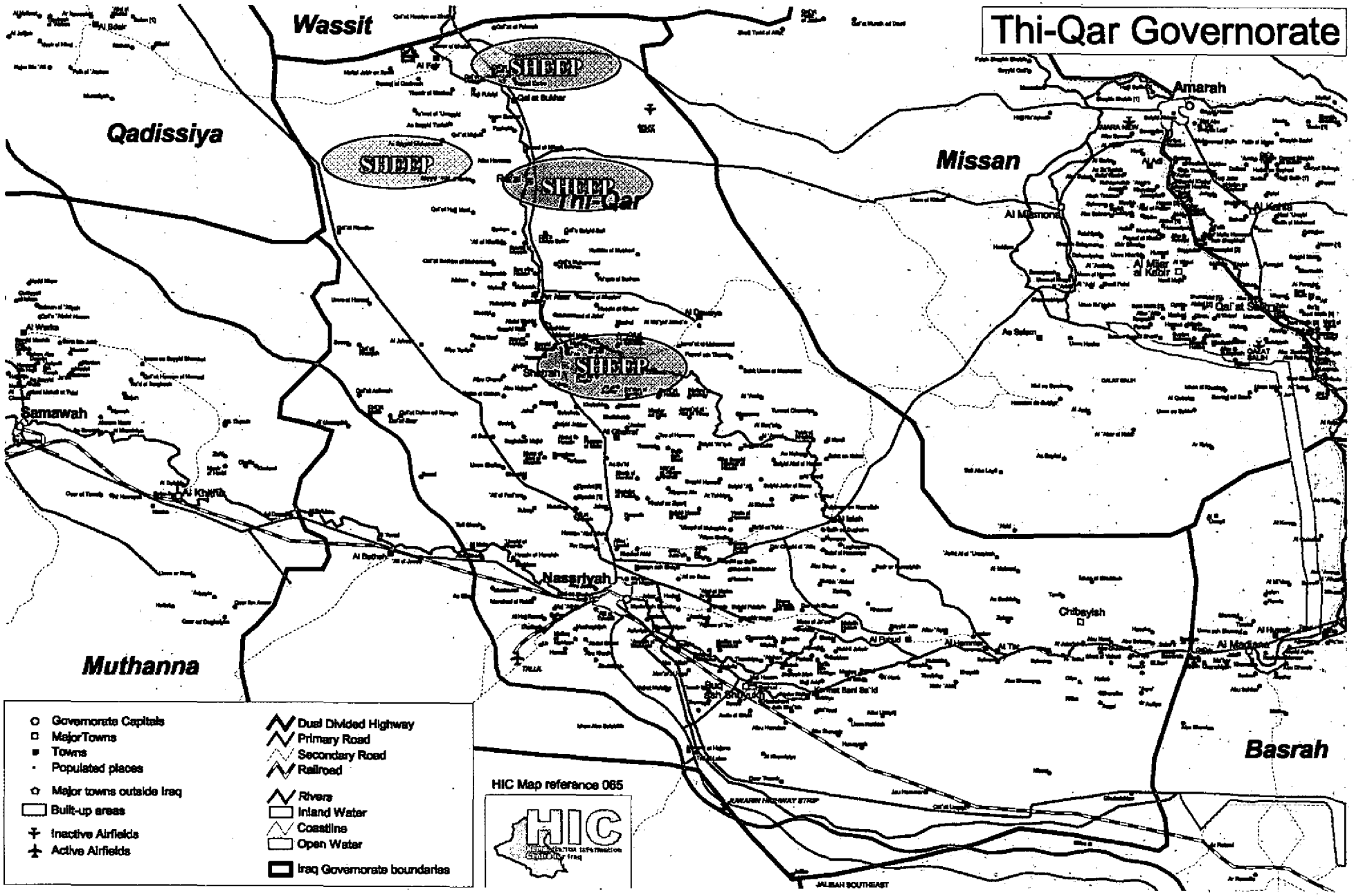
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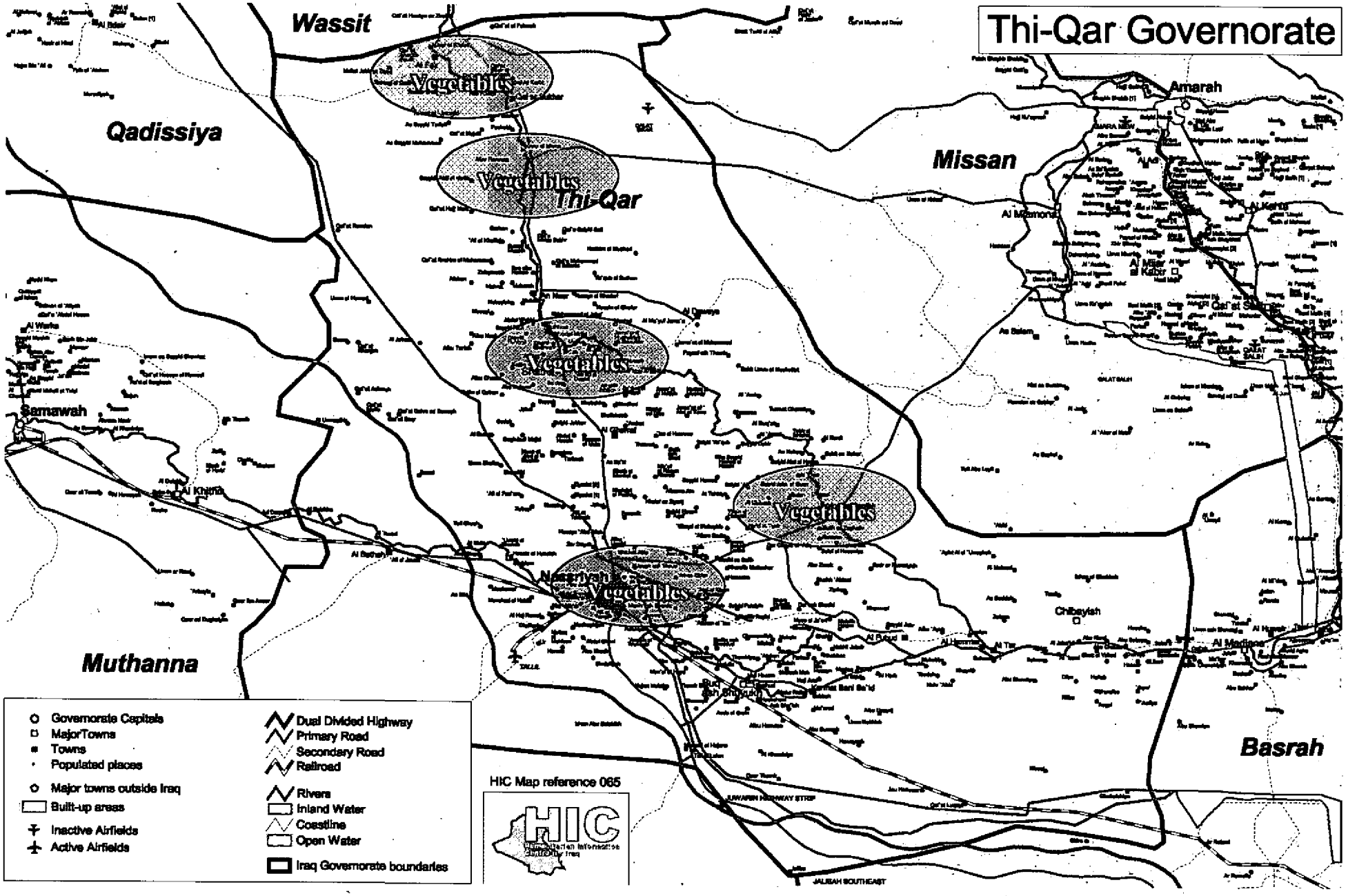
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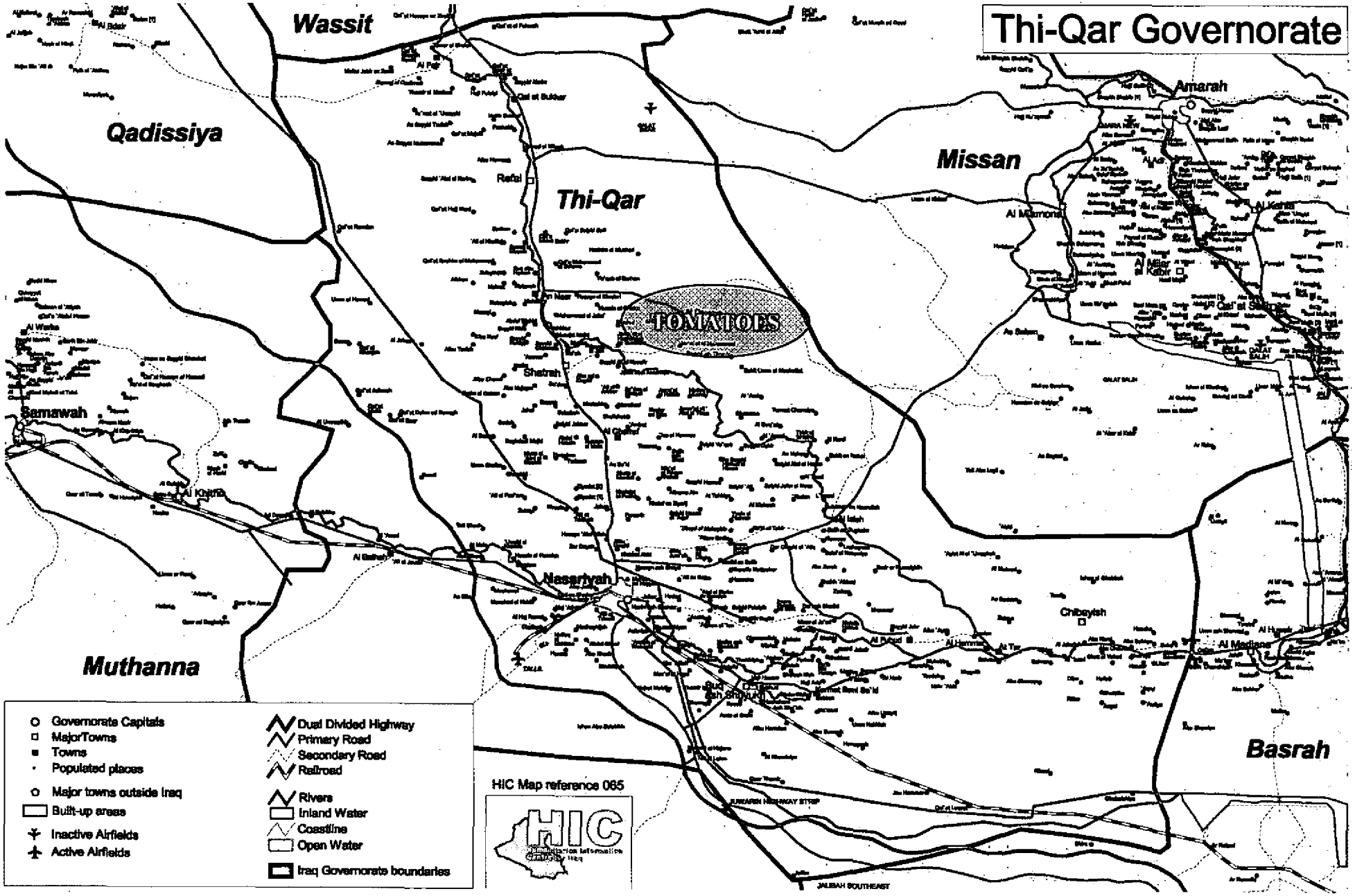
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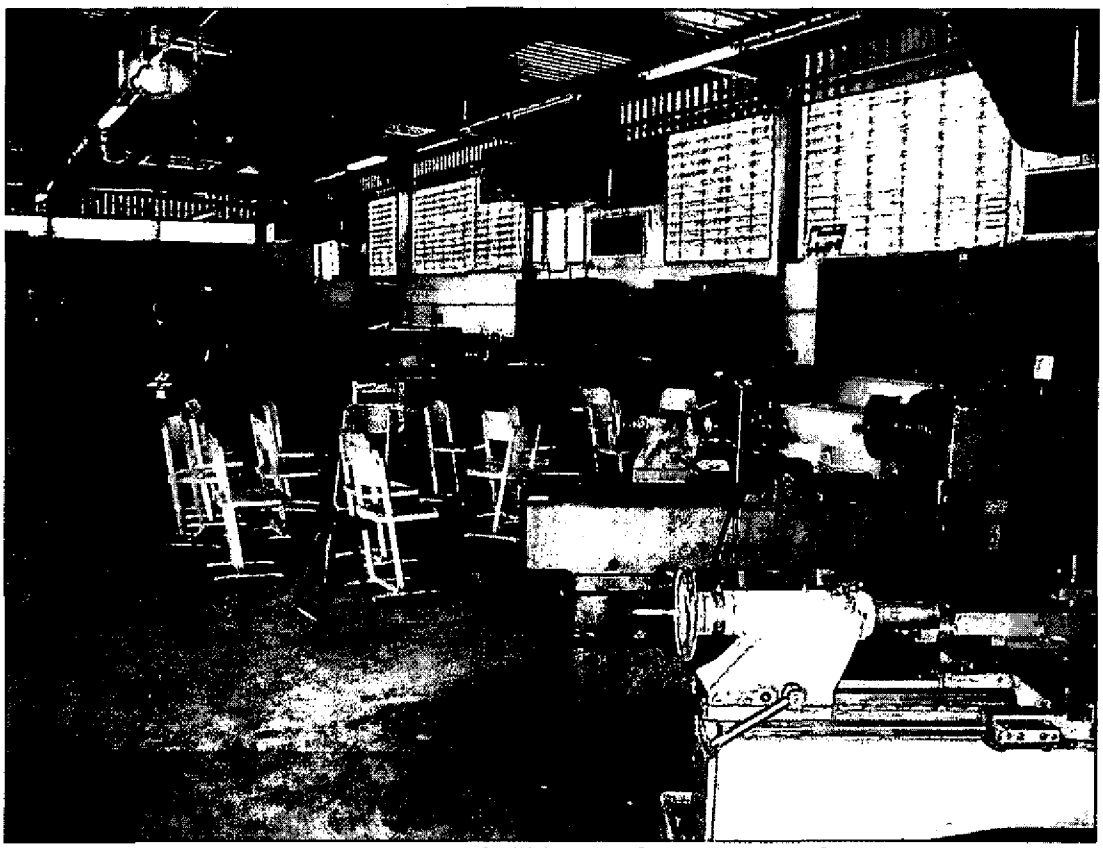
ANNEX 6

ADDITIONAL FIELD MISSION PICTURES

Picture 20 - Turning lathes at MOLSA Training Centre in Nassiriyah



Picture 21 – Workshop with training facilities at MOLSA Training Centre in Nassiriyah

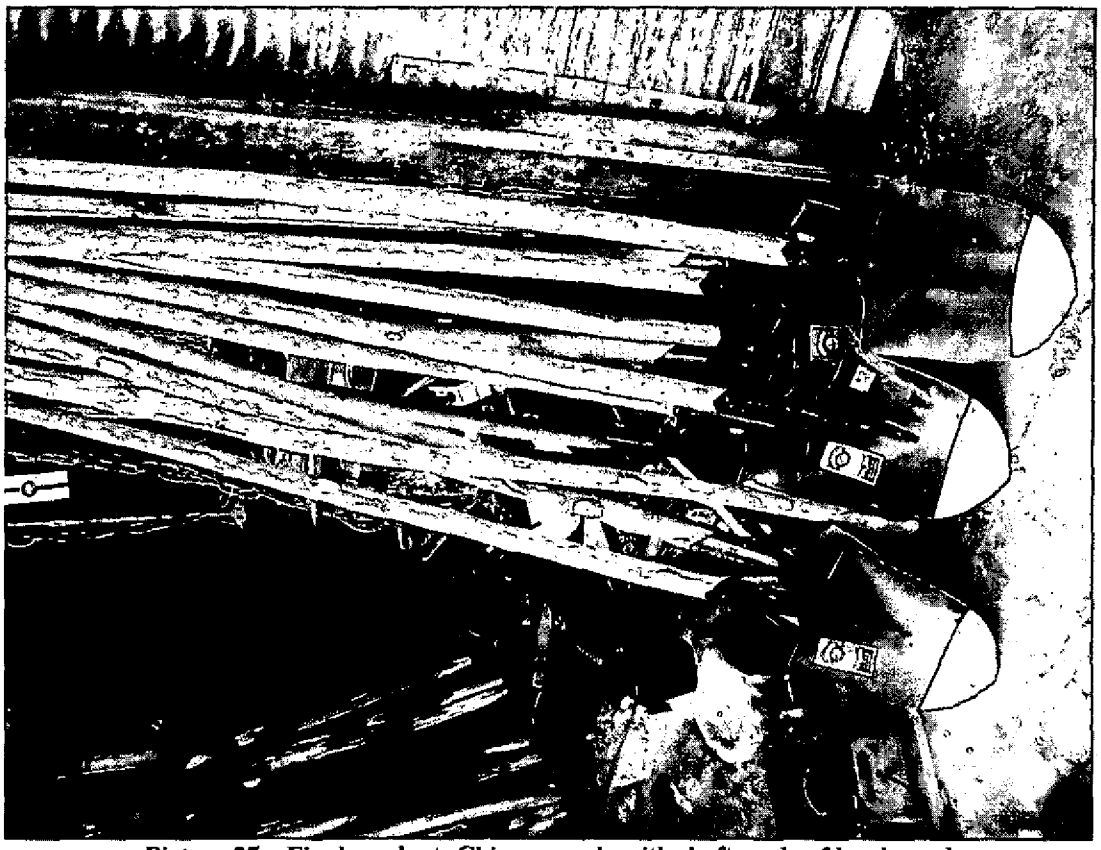
Picture 22 – Generator repair shop

Picture 23 – Shop manufacturing simple agricultural tools and implements

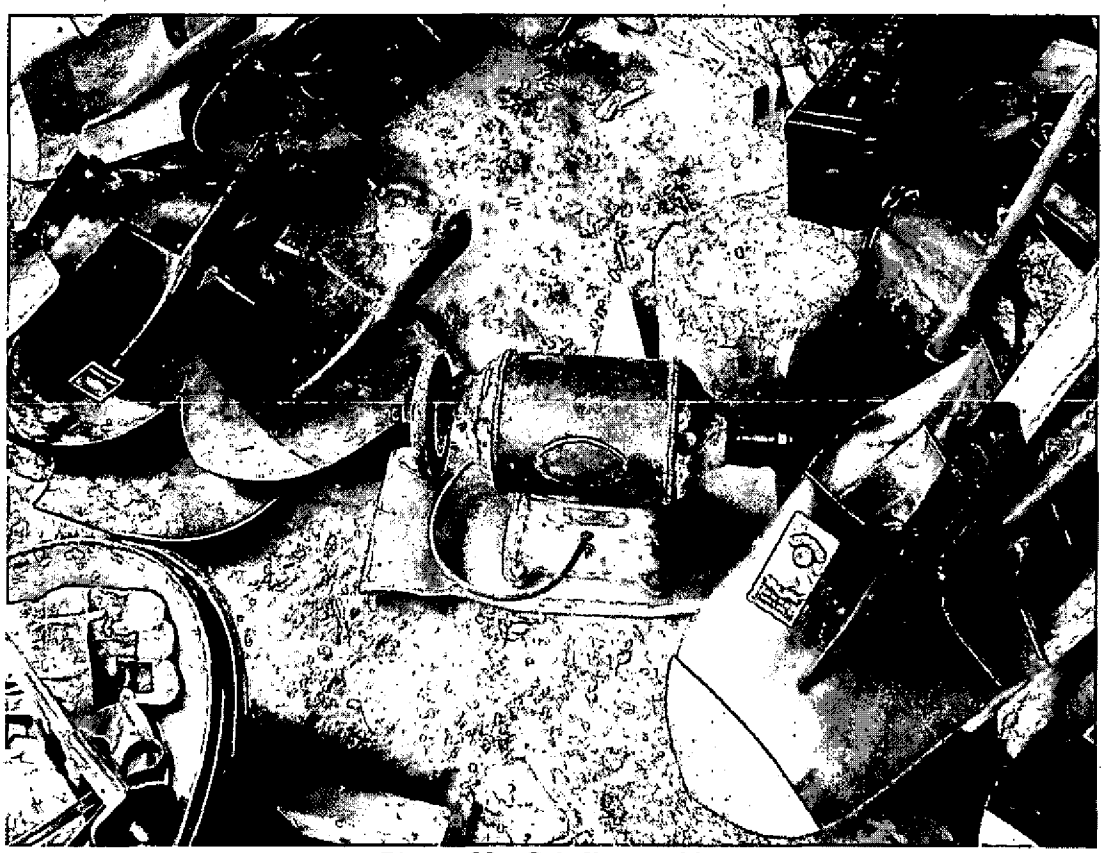
Picture 24 – Chinese imported cutters

Picture 25 – Locally produced cutters

Picture 26 – Left: locally produced spade, middle/right Chinese imported spade



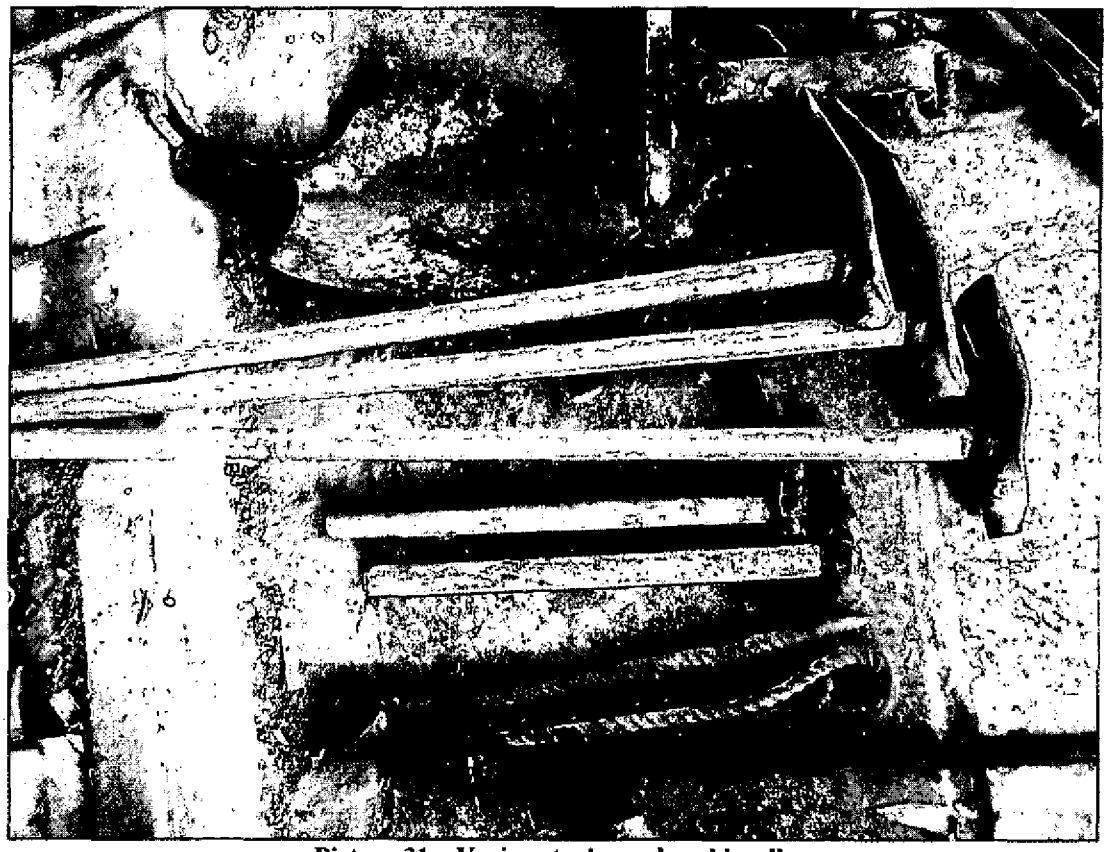
Picture 27 – Final product: Chinese spade with shaft made of local wood



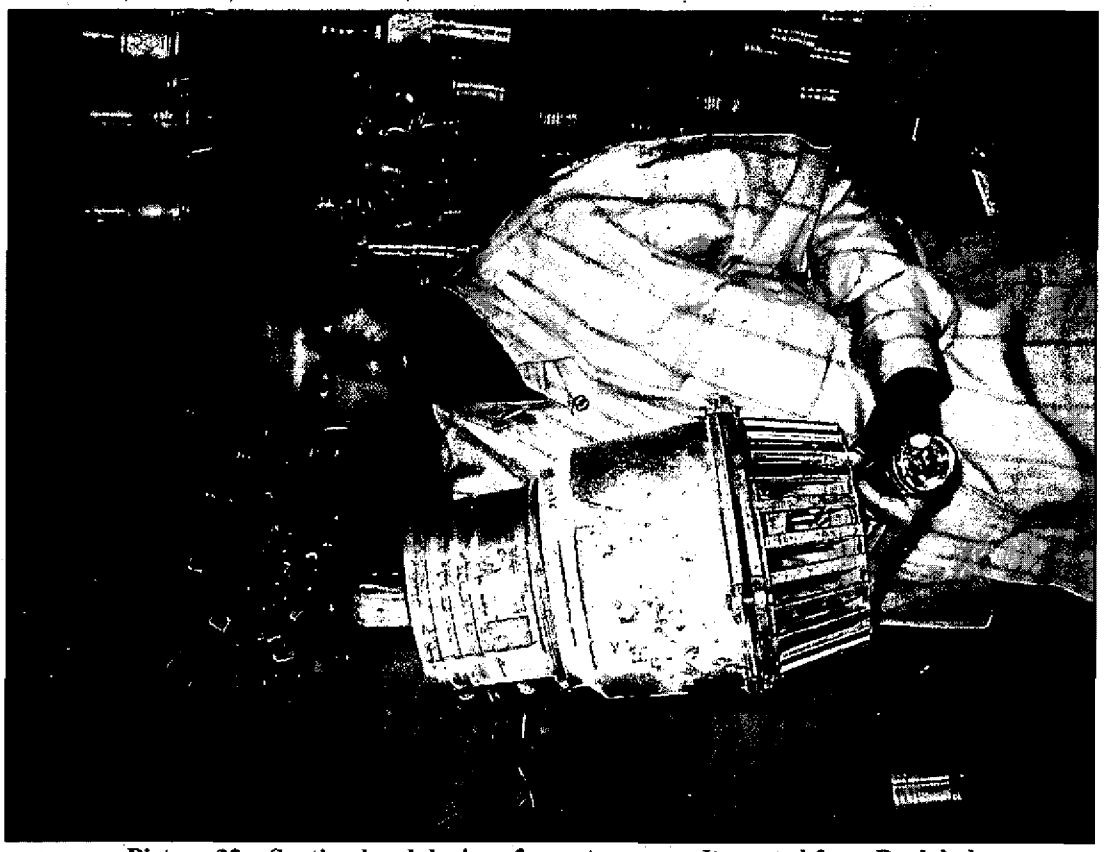
Picture 28 – Grinding machine

Picture 29 – Locally produced mattock

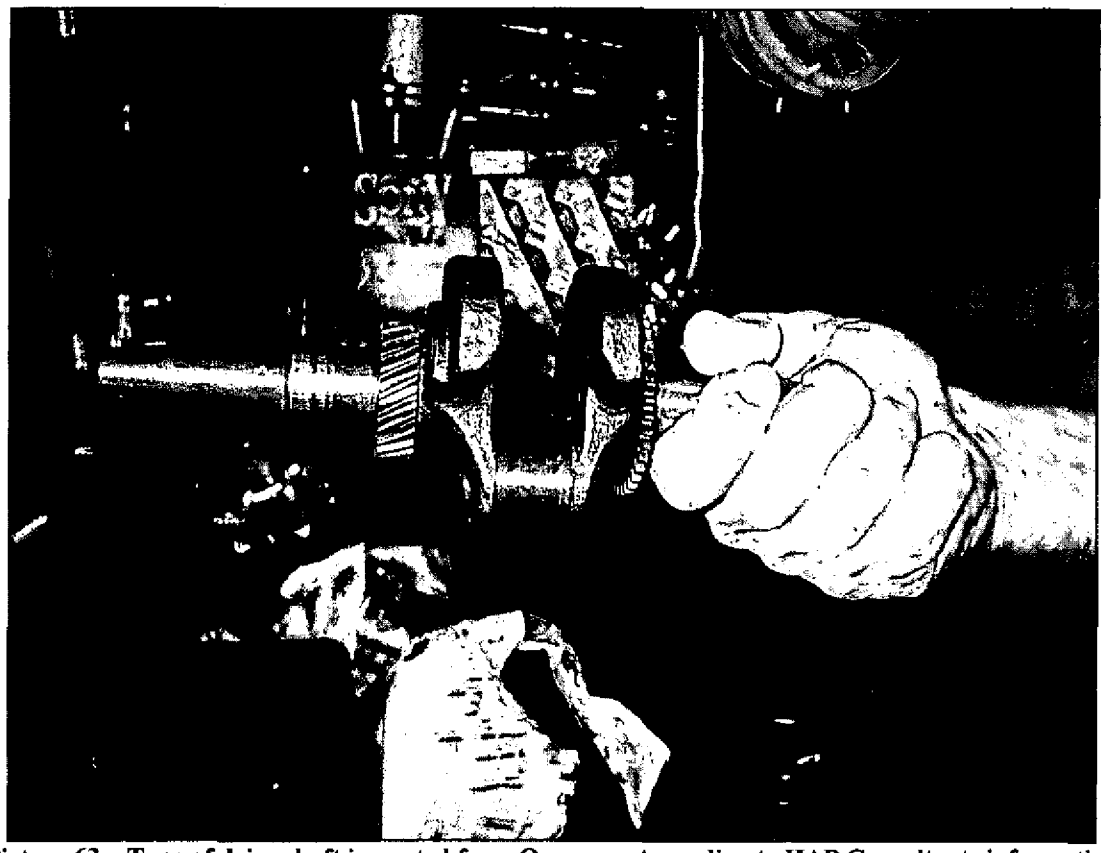
Picture 30 – Mattock, which indicate poor welding technique



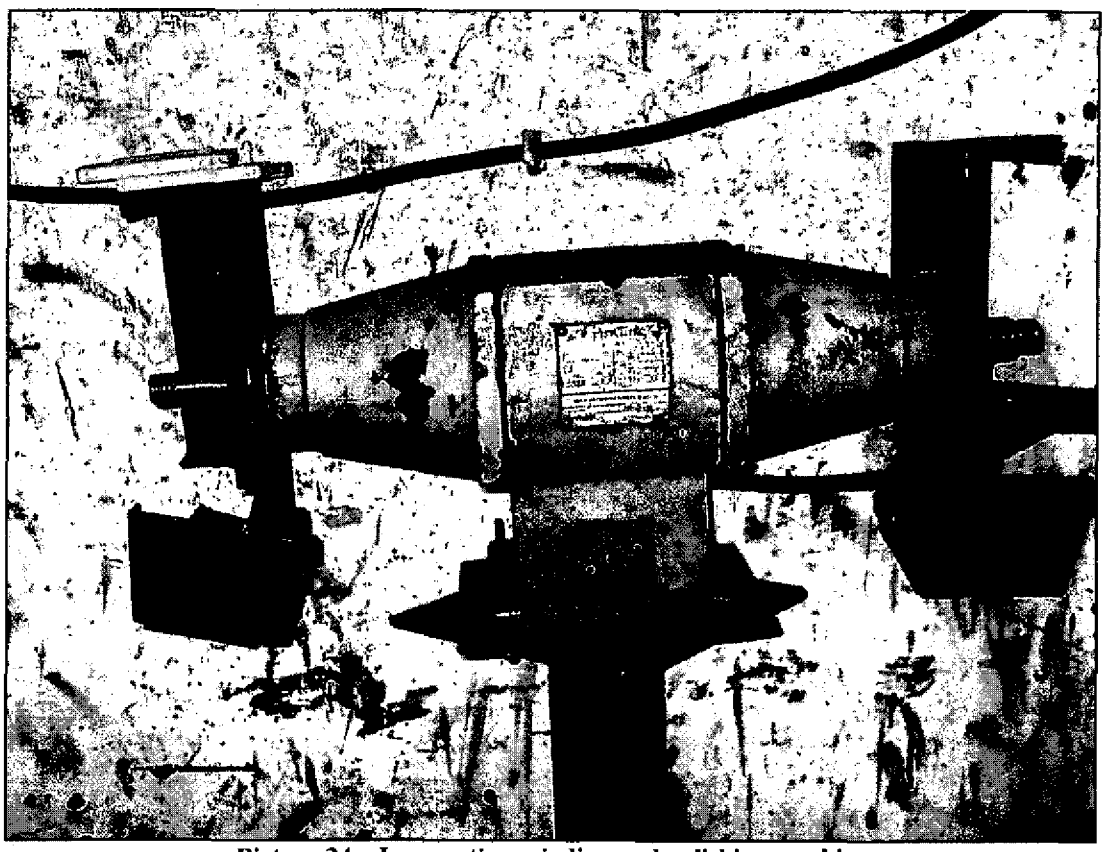
Picture 31 – Various tools produced locally



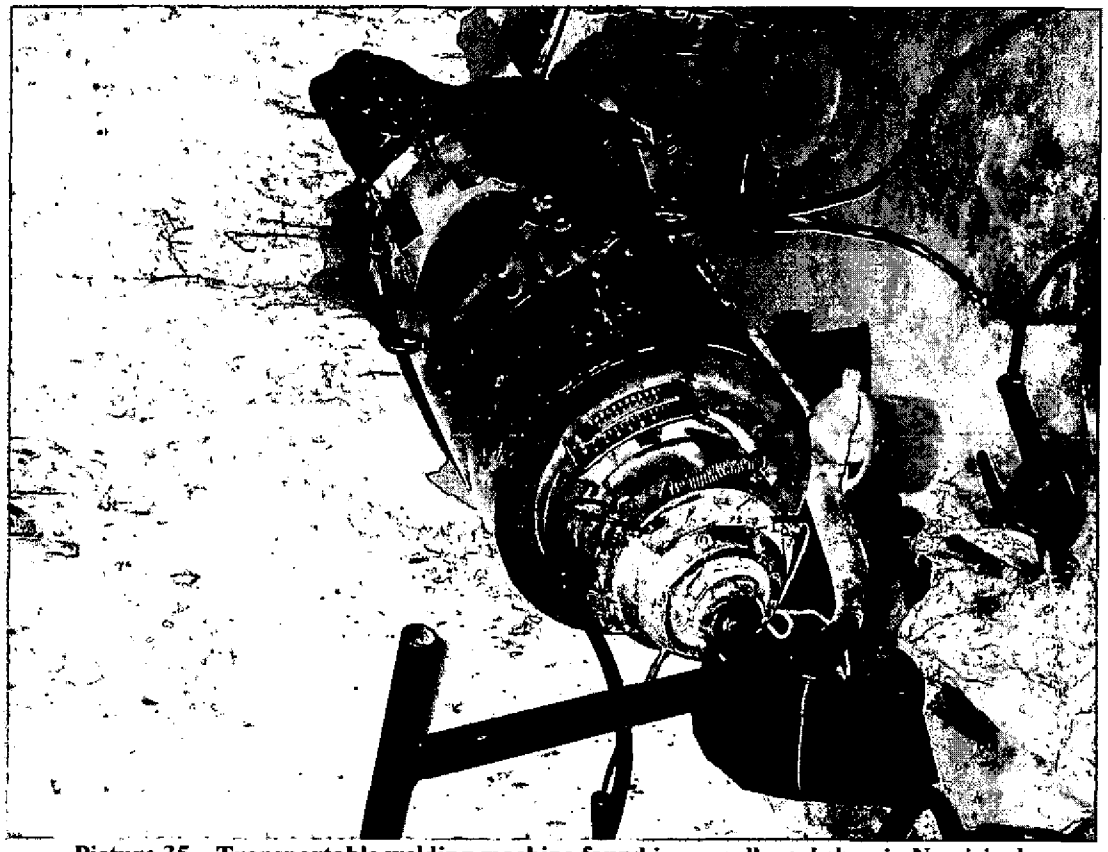
Picture 32 – Suction head drainer for water pump. Imported from Baghdad



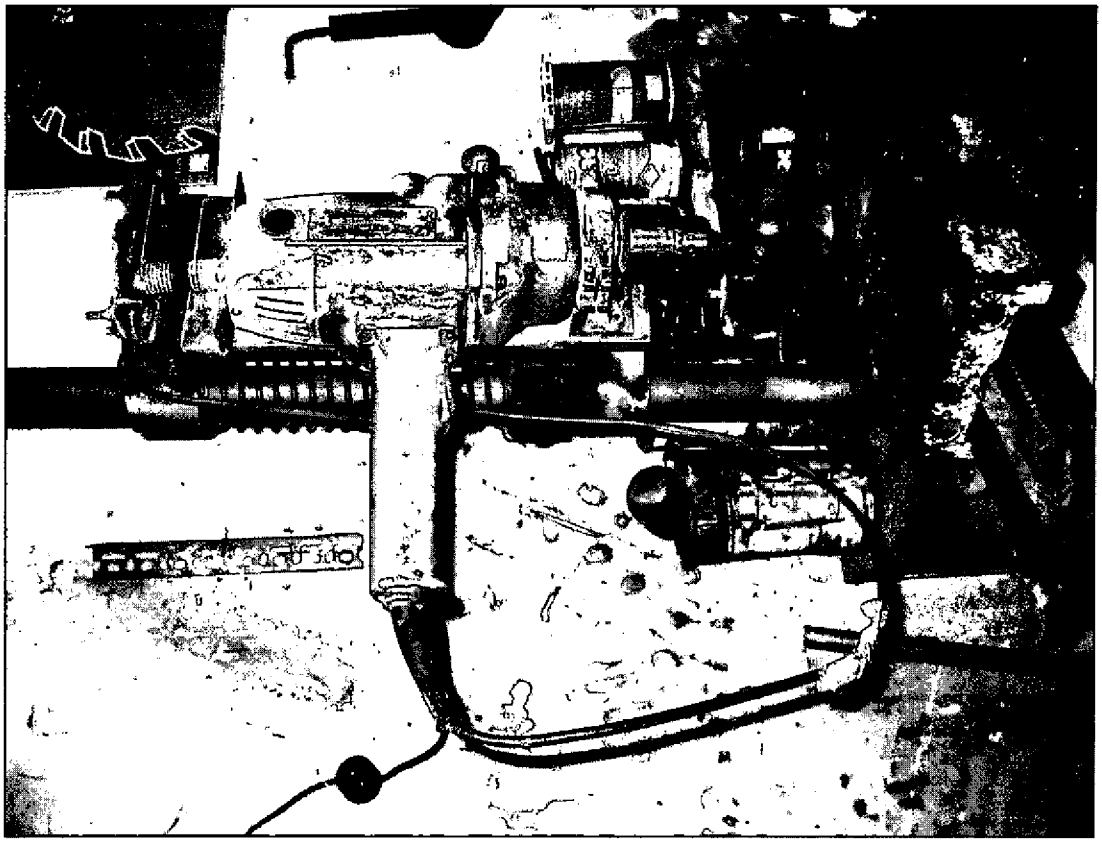
Picture 63 – Type of drive shaft imported from Overseas. According to HAP Consultants information there exist no workshops in Thi Qar who can produce advanced items like this.



Picture 34 – Inoperative grinding and polishing machine



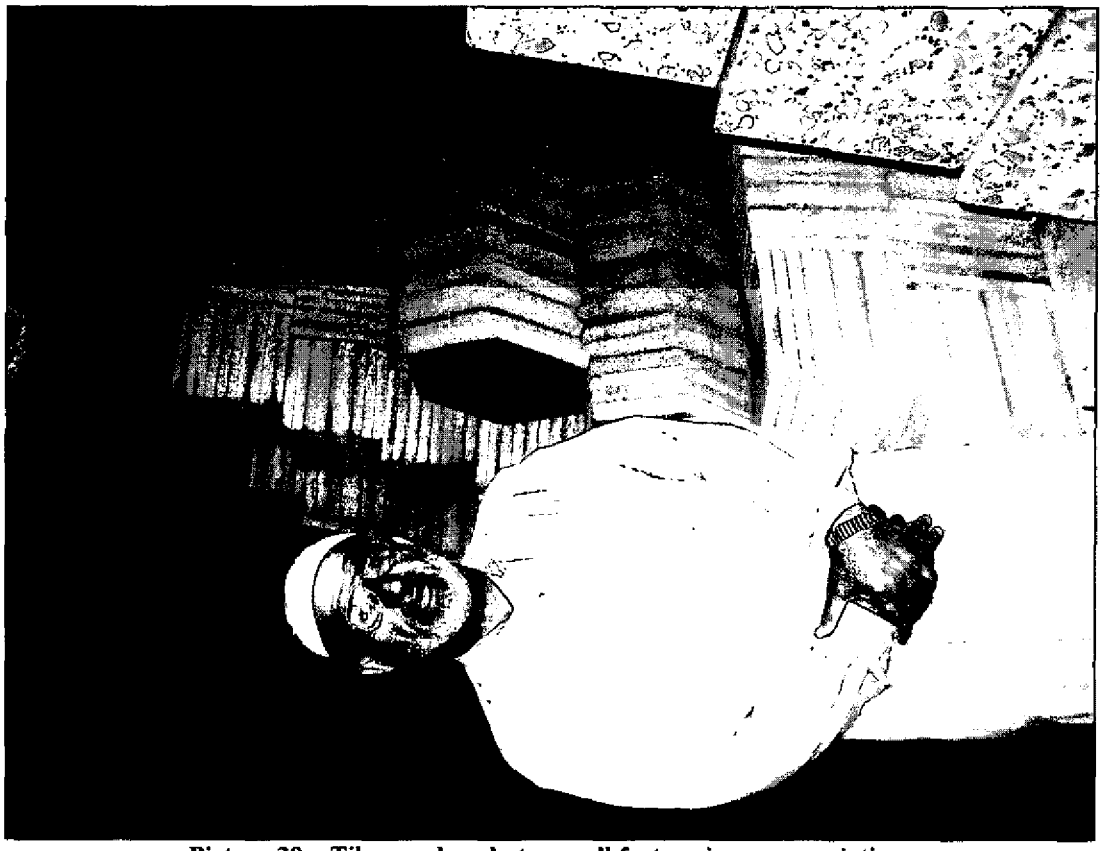
Picture 35 – Transportable welding machine found in a small workshop in Nassiriyah



Picture 36 – Metal workshop equipped with one of the most necessary tools – a drilling machine

Picture 37 – Large grinding machine

Picture 38 – One of many bakeries in Nassiriyah making bread and pastry with date filling



Picture 39 – Tiles produced at a small factory in many variations

ANNEX 7

ACCOUNT OF THE FIELDTRIP AND THE EXECUTION OF THE SURVEY

Survey of Existing Cottage Industries

The aim of carrying out a survey was in brief to find out what cottage industries exists, how the development has been over the past 5 to 10 years, identify processing units which could become operational with a limited project input, identify constraints of the sector.

Originally it was planned to devise a strategy for the execution of the survey based on a set of background material to be provided by the local counterparts. This however, was not prepared. In the absence of background data it was decided to have the local counterparts to prepare a list of the existing cottage industries. Based on such a list a certain number of industries would be selected using e.g. location, type and size of industries as selection criteria. In this way representative samples could have been made. Registration forms were sent prior to the field mission, but these were not completed.

Upon arrival HAP Consultants found that no official list of cottage- and micro industries exists. The representatives of the Ministry of Planning did inform the consultants that such a list did exist 10 years ago, but to day it does not exist any longer. The only way to get information of existing cottage industries is to ask the sub-district officials who know the location of processing units in their area. It was not possible for the Consultants to visit all districts to collect this type of information due to limited time. HAP therefore dispatched the 6 survey teams instructing them to try to select as representative industries as possible. The disadvantage of this way of sample selection showed after the first 4 days where there was an overweight of milk production. The Consultants tried to correct this by instructing the NPC to contact the enumerators and instruct them to switch focus.

Brief Feasibility Analysis

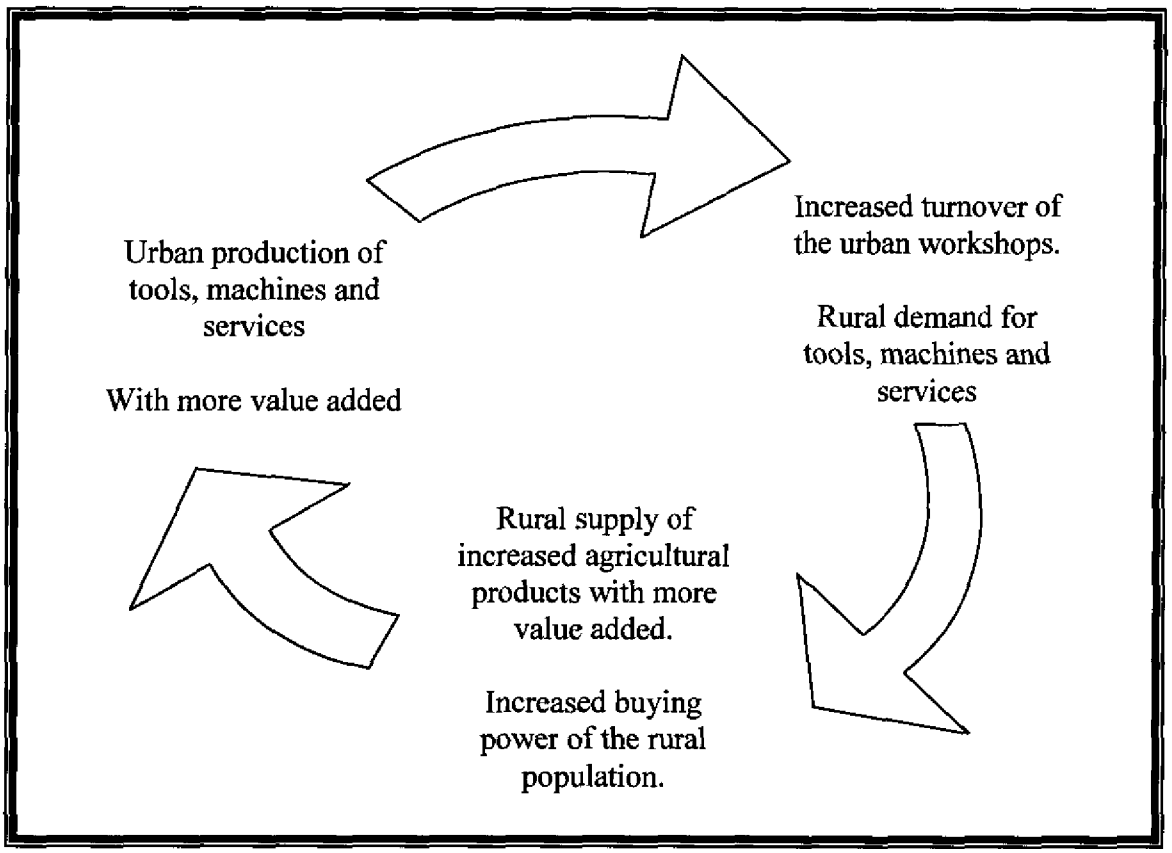
The second element in determining the need was to analyse production, financial and market data of potential cottage industries. This has been hampered by lack of data combined with the restrictions imposed by the security situation, which made field trips and interviews of potential beneficiaries few and brief.

Raw Material and Service Availability

Thirdly, data about the raw-material availability has been collected. These should give an indication of excess raw material and / or service capacity, which could be a base for cottage industries.

The type of projects which ideally should be identified are the once which develop an urban production of agricultural machines and services. Such tools and implements should increase productivity; add value and hence buying power to the rural communities. This would in turn stimulate the economy of the Governorate.

The figure below shows the interconnection of the type of projects, which ideally should be identified.



Execution

HAP Consultants carried out the need assessment with a group of 12 persons from the two ministries concerned. Most of the enumerators were selected for further training by the project. The persons were divided into 6 teams. This method of using the persons to be trained by the project was put forward during the second PSC meeting in Amman, 6-7th March 2005, and accepted by HAP Consultants. The advantage of using the persons to be trained and later employed to carry out the project is that they would familiarise themselves with the context in which the project is set and therefore be better prepared to take ownership of the project.

HAP Consultants prepared a registration form to be used by the local authorities to register the location and activities of existing and non-operational cottage industries in Thi-Qar (shown in Annex 7). It was anticipated that these forms would be completed and collected by the NPC prior to the commencement of the field survey. However, upon arrival to the project area this data was not prepared.

HAP Consultants briefly trained the 12 persons in enumeration and monitoring of the questionnaires. Two questionnaires have been prepared: One for food processing and one for crafts and handicrafts shown in Annex 8 and 9 respectively. Copies of both have been sent to the CTA in Amman in English and Arabic versions. The CTA forwarded them to UNIDO/FAO, the ministries concerned and to the NPC for review.

It was planned that HAP Consultants would guide the support teams intermittently, and periodic meetings would be held with all participants to monitor the progress and quality of data. Due to a worsened security situation this was not possible.

The assessment of potential projects was based on data's collected from the local authorities together with interviews with officials and the business community at Governorate, district, and sub- district levels. To facilitate the collection of this information HAP Consultants had prepared a list of information to be collected by the survey teams. The English version of the form is enclosed as Annex 10 and was translated into Arabic prior to the field-visit.

Constraints for the Execution of the Survey

Virtually no local statistics exists for production, consumption, import and export of goods and services. Companies, farms etc. are not registered. This prevents a systematic selection of cottage industries to be surveyed. The lack of data influences both the execution of the survey and the prediction of needs and demand.

Many agricultural inputs have at least 2 prices. One used by the Agricultural Supply Company under MOA which is partly subsidised and where only limited quantities are available. The other is the market price. It is not possible to know which one is used in a particular questionnaire or quoted in an interview. Prices from the two sources can be mixed in the same calculation, which distorts the picture somewhat.

The lack of nomination of a new government might have influenced government officials to take a less active role in the execution of the project, due to the uncertainty of future government policies.

The notion of cottage industries as a small family run business adding value to a product or service is generally not seen as a desired form of development. Traditionally, the central government has created large scale processing industries, which were more politically motivated than market and profit oriented. This type of development is still regarded by most decision makers, as the most needed one. It was apparent during discussions at all levels with local officials that the projects proposed were not cottage industry projects, but traditional large scale once. This misconception of the assistance offered by the project existed amongst all participants involved in the execution of the survey.

Meetings have been conducted quite effectively with interpreters, but all survey data and background documentation etc. is in Arabic (often hand written) and requires time consuming translation. In addition hereto, the English translation of the filled in Arabic questionnaires have turned out to be inadequate and contain incomprehensible information.

Telephone connections are problematic as system overload and limited network access is a regular feature on the mobile net as well as on the Thuraya net.

The execution of the survey had some specific shortcomings:

- The questionnaires have not been filled in uniformly. They do not give answers to all questions. The given answers are not always in the units shown in the text. All in all this make comparisons between different parameters difficult.
- Too many questionnaires do not deal with processing industries but with pure production. There is a number of processing industries of interest which has not been dealt with: carpet weaving, wool spinning etc. and there are a lack of questionnaires for urban activities

ANNEX 8

REGISTRATION FORM FOR OPERATIONAL AND NON-OPERATIONAL COTTAGE INDUSTRIES

UNIDO / FAO Joint Initiative

Cottage Industry Sector Survey in Thi Qar Governorate, Iraq

REGISTRATION FORM FOR COTTAGE INDUSTRIES IN THI QAR

1. General Data:

Date:		Urban/Rural location: (Specify)	
Governorate:	District:	Sub-District:	Village Name:

2. Respondent Data:

Name of the processing unit:	Name of owner/contact person:

3. Type of Cottage Industry:

Specify type of cottage industry:		Specify products produced within each type of cottage industry:
Rural industries		Specify products produced within each type of cottage industry:
Aromas and Spices		
Cereal		
Dairy		
Fish		
Fruit		
Meat		
Vegetable		
Others		
Urban industries		
Brick/Cement Stone Production		
Carpenter		
General mechanical/Repair workshop		
Metal Building Workshop		
Handicraft		
Others		

	Functioning	Temporarily out of order (repair needed)	Stopped functioning
Is the cottage industry (Y/N):			

ANNEX 9

QUESTIONNAIRE FOR FOOD

UNIDO / FAO Joint Initiative

Cottage Industry Sector Survey In Thi Qar Governorate, Iraq

QUESTIONNAIRE FOR FOOD

1. General Data:

Date:	Interviewer:	Recorder:	Urban/Rural location: (Specify)
Governorate:	**District:**	**Sub-District:**	**Village Name:**

2. Respondent Data:

Name of the respondent:	Family name:	Sex (M/F):	Household member status:

3. Type of Cottage Industry:

Specify type of cottage industry:		Specify products produced within each type of cottage industry:
Aromas and Spices		
Cereal		
Dairy		
Fish		
Fruit		
Meat		
Vegetable		
Others		

4. Household Data:

	A household	An individual outside the household	An Association	Others
Is the cottage industry owned/operated by:				

Household and or data of employees:

#	Relation to the owner	Sex (M/F)	Age (Years)	Physical status (code)	Education (code)	Owner(s) of cottage industry	Working in cottage industry
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Education Code: 1=Illiterate, 2=Under Primary, 3=Primary, 4=Middle (9th grade), 5=Secondary, 6=Higher Secondary/Technical Diploma, 7=Bachelor Degree from University, 8= Post Degree Diploma, 9=Masters Degree from University, 10=Higher than Masters

Physical Status Code: 1=Normal, 2=Returnee, 3=Internally Displaced Person

5. Additional Farming or Livestock Activities:

Yes/No

If Yes, then size of holding (donums)

Crops grown and area per crop

	Type of species	Donums covered	Proportion of crops used in cottage industry (%)
1)			
2)			
3)			
4)			
5)			

Livestock raised and number

	Type of livestock	Number	Proportion of animals or animal products used in cottage industry (%)
1)			
2)			
3)			
4)			
5)			

	On-Farming	Cottage Industry	Off-Farming
Annual turnover from processing operations (ID)			
Annual production costs (ID)			
Annual household income (ID)			

5. Additional farming or livestock activities (Cont.)

	Daily	Weekly	Monthly	Annually
Scale of cottage industry processing operation (ID)				
Quantity produced (l/kg/psc.)				

Is the current cottage industry different from that operated before the current war? (Y/N) ☐

If yes, what was the pre-war operation? _____

Would you be interested in shifting back to your original operation? (Y/N) ☐

If yes, why would you like to shift back to your original operation? _____

What prevents you from shifting back to your original operation? _____

6. Raw Materials

Proportion of source of raw materials (%):

Own farm	Wholesaler	Retailer	Cooperative	Others (Specify)

Problems with raw material:

Price	Availability	Quality	Others (Specify)

Means of supply:

Man	Vehicle	Animals	Farm cart	Others (Specify

Seasonal variation of raw material:

Month	Supply (Quantity l/kg/psc. etc.)	Availability		Price (ID)	Quality		
		Yes	No		Low	Average	High
Jan.							
Feb.							
Mar.							
Apr.							
May.							
Jun							
Jul							
Aug							
Sep							
Oct.							
Nov							
Dec							

7. Production Process

Process Description: (Fill in the flow diagram of the process and register raw material input and equipment used for each process)

Raw material input	Process flow	Equipment Type	Equipment Model
	1)		
	2)		
	3)		
	4)		
	5)		
	6)		
	7)		
	8)		
	9)		
	10)		
	11)		

7. Production Process (Cont.)

Regularity of production:	
Month	Amount (l/kg/pac. etc.)
Jan.	
Feb.	
Mar.	
Apr.	
May.	
Jun.	
Jul.	
Aug.	
Sep.	
Oct.	
Nov.	
Dec.	

Capacity of process (kg/day)	Proportion of product consumed by farmer (%)

Is the product used as raw material for further in-house processing? (Y/N)

If yes, what proportion?

Is the finished product sold for food/direct consumption? (Y/N)

If yes, what proportion?

Is the finished product sold to provide raw material for further processing (Y/N)

If Yes, what proportion?

Loss of raw materials/products:

	Storage of raw materials	Processing	marketing
% of total quantity			

Is there a by-product? (Y/N) If yes, describe the type of by-product:

How much by-product is generated? (kg/day) How is the by-product utilised:

How much waste is generated? (kg/day)

Is there a disposal problem? (Y/N) If yes, describe

What energy sources are used in the production process: (%)

Wood	Electricity	Charcoal	Gas	Manual	Animal

8. Packaging

Are the products packaged for marketing? (Y/N)

If yes, is the product sold in bulk, large packages (bags/milk cans etc.) or retail packages?

Bulk	Large	Retail

Describe the packaging used:

	Packaging form		
	Primary	Secondary	Tertiary
Type of material			

Source of supply of packaging materials (%) and problems	Own farm	Wholesaler	Retailer	Cooperative	Others (Specify)
Price (ID)					
Availability (Y/N)					
Quality (Low/Average/High)					
Others (Specify)					

What is the expected shelf-life of the product? (days/weeks/months/years)

9. Quality Assurance

Are quality control practices implemented? (Y/N)

Are finished products classified in quality grades? (Y/N)

Is there regulatory control of the quality? (Y/N)

Describe the type of hygiene control measures implemented:

How are the sanitary conditions :

Sanitary level		
Poor	Satisfactory	Good

10. Labour

People involved in each stage of the processing activity:

Process Number	Labour input						Particular education required (Specify)	Particular training required/provided (Specify)
	Hours	Sex(M/F)	Number of people					
			Family	Coope-rative	Hired	Others		
1)								
2)								
3)								
4)								
5)								
6)								
7)								
8)								
9)								
10)								
11)								

Seasonal Labour:

Month	No.
Jan.	
Feb.	
Mar.	
Apr.	
May.	
Jun.	
Jul.	
Aug.	
Sep.	
Oct.	
Nov.	
Dec.	

Payment of hired labour:

Daily salary (ID)	
Share of production (%)	

11. Equipment

Type of equipment	Cost (ID)	Source of funds to buy equipment (Code)	Source of equipment (Code)	Ownership (Code)	Condition (Code)	Age	Source of spareparts (Code)	Repair (Code)

Source of funds to buy equipment (code): 1=Own savings, 2=bank, 3=loan (specify from)

Source of equipment code: 1=Local fabricated, 2=imported

Ownership code: 1=All family, 2=head of family, 3=coporative (No. of people), 4= individual private (Gender: M/F)

Condition code: 1=Working and no repair needed, 2=working but repairs needed, 3=broken down/not working, 4= scrap to be replaced, 5=idle no work

Repair code: 1=Self, 2=freelance mechanic, 3=local repair shop, 4=dealership, 5=other (specify)

Source of spareparts code: 1=Retail shop, 2=government store, 3=dealership, 4=other (specify)

12. Facilities

Site description: _____

Site sketch:

12. Facilities (Cont.)

General facility details:

Building Type	Ownership of facility			Available infrastructure			
	Own	Rented	Leased	Electricity	Water	Roads	Others (Specify)
Mud							
Concrete							
Others (Specify)							

On-farm storage:

Type of product	On-farm storage						Storage period	
	Special storage (specify silo/milktank etc.)	Outdoor	Covered	Indoor			From	To
				Room temp	Cooled	Frezing		
Raw material								
Intermediate products								
Finished products								
By-products								

Off-farm:

Type of product	Off-farm storage				
	Special storage (specify silo/milktank etc.)	Outdoor	Covered	Indoor	
				Room temp	Cooled	Frezing
Raw material						
Intermediate products						
Finished products						
By-products						

Who store	Transporter	Vendors	Market place	Wholesaler	Retailer

13. Marketing

Does tradors come to your farm to buy your products? (Y/N) [ ]

How does the tradors buy the product?	Bulk	Small packages	Consumer packages	Others (Specify)

Does the tradors have own transportation? (Y/N) [ ]

Where does the tradore sell the product? (Specify name of market(s) and distance to market(s)) _____

How does the tradors sell the product?	Wholesale markets	Open general markets	Pedling	Retail Shops	Others (Specify)

How does the tradors sell the product?	Bulk	Small packages	Consumer packages	Others (Specify)

Are there many tradors? [ ]

Does the tradors have a dominant market position? (Y/N) [ ]

Does the tradors controle the urban market? (Y/N)

Is it possible for producers to sell directly to the market? (Y/N) [ ]

What is the sales price in the market (ID) [ ]

Market demand:

	Local community	District	Governorate	National	Export
% demand at					

Potential market demand if production was larger:

	Local community	District	Governorate	National	Export
% demand at					

Competitors/Other producers of the same or similar products:

	Local community	District	Governorate
No. of producers			
Quantity of products (l/kg./psc.)			

To what extend are products of the same or similar products imported to the local community? (limited, average, large) [ ]

If yes, what is the purchase prise? (ID) [ ]

14. Credit

	Credit source		Amount	Terms/Interest	Collateral (Specify)
	Formal	Informal			
Working capital					
Equipment					
Building					
Land					

15. Assistance

Advice received:

Type	Duration	Provider

Training received:

Type	Duration	Provider

16. Groups/Associations

What groups exist for this type of business?	Cooperative	trade association	farmer group	Others (specify

Are you a member of any of these associations? (Y/N) ☐ If yes, give details: _____

17. Overall Operational Assessment

Key problems affecting day-to-day operations:

Type of problem	Ranking	Specify	Suggestions for improving problems
Advice			
Credit			
Equipment			
Government policy			
Hygiene			
Maintenance			
Marketing			
Packaging			
Processing			
Quality control			
Raw materials			
Tools			
Training			
Other			

Suggestions for improving existing operation: _____

_____

_____

_____

_____

Suggestions for developing additional processing activities: (meat, cereals, honey, fruit, oils etc.) _____

_____

_____

_____

_____

_____

18. Collaboration with UNIDO/FAO joint initiative

Would you be interested in contributing with input to the UNIDO/FAO project? (Y/N) ☐

What can you contribute with towards achieving goals of the project (time, labour, facilities, knowledge exchange etc.) ?

What key needs could be adressed by the project?

What priority actions could be taken by the project?

What are your expectations from the project?

ANNEX 10

QUESTIONNAIRE FOR CRAFTS AND HANDICRAFTS

UNIDO / FAO Joint Initiative

Cottage Industry Sector Survey in Thi Qar Governorate, Iraq

QUESTIONNAIRE FOR CRAFTS & HANDICRAFTS

1. General Data:

Date:	Interviewer:	Recorder:	Urban/Rural location: (Specify)
Governorate:	**District:**	**Sub-District:**	**Village Name:**

2. Respondent Data:

Name of the respondent:	Family name:	Sex (M/F):	Household member status:

3. Type of Cottage Industry:

Specify type of cottage industry:		Specify products produced within each type of cottage industry:
Brick/Cement Stone Production		
Carpenter		
General mechanical/Repair workshop		
Metal Building Workshop		
Handicraft		
Others		

4. Ownership of cottage industry:

	A household	An individual outside the household	An Association	Others
Is the cottage industry owned/operated by:				

Household and or data of employees:

#	Relation to the owner	Sex (M/F)	Age (Years)	Physical status (code)	Education (code)	Owner(s) of cottage industry	Working in cottage industry
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Education Code: 1=Illiterate, 2=Under Primary, 3=Primary, 4=Middle (8th grade), 5=Secondary, 6=Higher Secondary/Technical Diploma, 7=Bachelor Degree from University, 8=Post Degree Diploma, 9=Masters Degree from University, 10=Higher than Masters

Physical Status Code: 1=Normal, 2=Returnee, 3=Internally Displaced Person

5. size of cottage industry

	Daily	Weekly	Monthly	Annually
Scale of cottage industry processing operation (ID)				
Quantity produced (Ukg/psc.)				

Is the current cottage industry different from that operated before the current war? (Y/N) ____

If yes, what was the pre-war operation? _____

Would you be interested in shifting back to your original operation? (Y/N) ____

If yes, why would you like to shift back to your original operation? _____

What prevents you from shifting back to your original operation? _____

6. Raw Materials

Proportion of source of raw materials (%):

Own	Wholesaler	Retailer	Cooperative	Others (Specify)

Problems with raw material:

Price	Availability	Quality	Others (Specify)

Means of transport of raw material:
Does the cottage industry own:

Man	Vehicle	Animals	Farm cart	Others (Specify

Seasonal variation of raw material:

Month	Supply (Quantity l/kg/psc. etc.)	Availability		Price (ID)	Quality		
		Yes	No		Low	Average	High
Jan.							
Feb.							
Mar.							
Apr.							
May.							
Jun							
Jul							
Aug							
Sep							
Oct.							
Nov							
Dec							

7. Production Process

Process Description: (Fill in the flow diagram of the process and register raw material input and equipment used for each process)

Raw material input	Process flow	Equipment Type	Equipment Model
	1)		
	2)		
	3)		
	4)		
	5)		
	6)		
	7)		
	8)		
	9)		
	10)		
	11)		

Regularity of production:	
Month	Amount (l/kg/psc. etc.)
Jan.	
Feb.	
Mar.	
Apr.	
May.	
Jun.	
Jul.	
Aug.	
Sep.	
Oct.	
Nov.	
Dec.	

Capacity of equipment(kg/hour)	Proportion (%) of product consumed by owner/workers

Is the product used as raw material for further in-house processing? (Y/N)	
If yes, what proportion?	
Is the finished product sold directly to consumers? (Y/N)	
If yes, what proportion?	

7. Production process (Cont.)

Is the finished product sold to provide raw material for further processing (Y/N)	

If Yes, what proportion? ____

Loss/breakage of raw materials/products during:

	Storage	Processing	marketing
% of total			

Is there a by-product? (Y/N) ____ If yes, describe the type of by-product: _____

How much by-product is generated? (kg/day) ____ How is the by-product utilised: _____

How is the remaining by-product disposed:

How much waste is generated? (kg/day) ____ How is waste disposed, describe: _____

Is there a disposal problem? (Y/N) ____ If yes, describe _____

What energy sources are used in the production process: (%)

Wood	Charcoal	Public El.	Generator	Gas	Manual	Animal

What water sources are used in the production process: (%)

River	Own well	Public net	Community well

Is the water cleaned/drinking water quality (Y/N) ____ If no, describe: _____

8. Quality Assurance

Are quality control practices implemented? (Y/N) ____

Are finished products classified in quality grades? (Y/N) ____

Is there regulatory control of the quality? (Y/N) ____

Describe the type of hygiene control measures implemented: _____

Are the sanitary conditions :

Sanitary level		
Poor	Satisfactory	Good

9. Labour

People involved in each stage of the processing activity:

Process Number	Labour input						Particular education required (Specify)	Particular training required/provided (Specify)
	Hours	Sex(M/F)	Number of people					
			Family	Asso-ciation	Hired	Others		
1)								
2)								
3)								
4)								
5)								
6)								
7)								
8)								
9)								
10)								
11)								

9. Labour (Cont.)

Seasonal Labour:

Month	No.
Jan.	
Feb.	
Mar.	
Apr.	
May.	
Jun.	
Jul.	
Aug.	
Sep.	
Oct.	
Nov.	
Dec.	

Payment of hired labour:
Daily salary (ID)
Share of production (%)

Payment of tecnicians:
Daily salary (ID)
Share of production (%)

Payment of manager:
Daily salary (ID)
Share of production (%)

10. Equipment

Type of equipment	Cost (ID)	Source of funds to buy equipment (Code)		Source of equipment (Code)		Ownership (Code)	Condition (Code)	Age	Source of spareparts (Code)	Repair (Code)

Source of funds to buy equipment (code): 1=Own savings, 2=bank, 3=loan (specify from)
Source of equipment code: 1=Local fabricated, 2=Imported
Ownership code: 1=All family, 2=head of family, 3=coporative (No. of people), 4= Individual private (Gender: M/F)
Condition code: 1=Working and no repair needed, 2=working but repairs needed, 3=broken down/not working, 4= scrap to be replaced, 5=idle no work
Repair code: 1=Self, 2=freelance mechanic, 3=local repair shop, 4=dealership, 5=other (specify)
Source of spareparts code: 1=Retail shop, 2=government store, 3=dealership, 4=other (specify)

11. Facilities

Site description: _____

Site sketch:

General facility details:

Building Type	Ownership of facility			Available infrastructure			
	Own	Rented	Leased	Electricity	Water	Roads	Others (Specify)
Mud							
Concrete							
Others (Specify)							

11. Facilities (Cont.)

Storage at process site:

Type of product	Storage						Storage period	
	Special storage (specify silo/milktank etc.)	Outdoor	Covered	Indoor			From	To
				Room temp	Cooled	Frezing		
Raw material								
Intermediate								
Finished products								
By-products								

Storage provided by others:

Type of product	Storage					
	Special storage (specify silo/milktank etc.)	Outdoor	Covered	Indore		
				Room temp	Cooled	Frezing
Raw material						
Intermediate						
Finished products						
By-products						
Who store	Transporter / Vendors	Market place		Wholesaler		Retailer

12. Marketing

Do you sell directly to consumers (Y/N): ____ What is the distance to the market (km): ____

What is the name of the market: _____ How big is the market (nos persons) ____

Does tradors/builders buy your products? (Y/N) ____

How does the tradors buy the product?	Bulk	Pcs.	Consumer packages	Others (Specify)

Does the tradors have own transportation? (Y/N) ____

Where does the tradors sell the product? (Specify name of market(s) and distance to market(s)) _____

To whom do they sell the product?	Wholesale markets	Open general markets	Pedling	Retail Shops	Others (Specify)

How does the tradors sell the product?	Bulk	Pcs.	Consumer packages	Others (Specify)

Are there many tradors (No)? ____ What is the margin (%) taken by the tradors? ____

Does the tradors have a dominant market position? (Y/N) ____

Does the tradors controle the urban market? (Y/N) ____

Is it possible for producers to sell directly to the market? (Y/N) ____

What is the sales price in the market (ID) ____

Market demand:

	Local community	District	Governorate	National	Export
% demand at					

Potential market demand if production was larger:

	Local community	District	Governorate	National	Export
% increase at					

Competitors/Other producers of the same or similar products:

	Local community	District	Governorate
No. of producers			
Quantity of products (l/kg./pec.)			

To what extend are products of the same or similar products imported to the local community? (small, medium, large) ☐

If yes, what is the prise for imported goods? (ID) ☐

Which quality is best local or imported products: _____

13. Credit

	Credit source		Amount (ID)	Terms/Interest	Collateral (Specify)
	Bank	Informal			
Working capital					
Equipment					
Building					
Land					

14. Assistance

Technical Assistance/Consultation available:

Type	Provider

Technical Assistance/Consultation recived:

Type	Duration	Provider

15. Groups/Associations

What associations exist for this type of business?	Cooperative	trade association	Guilds	Others (specify

Are you a member of any of these associations? (Y/N) ☐ If yes, give details: _____

16. Overall Operational Assessment

Key problems affecting day-to-day operations:

Type of problem	Ranking	Specify	Suggestions for improving problems
Advice			
Credit			
Equipment			
Government policy			
Hygiene			
Maintenance			
Marketing			
Packaging			
Processing			
Quality control			
Raw materials			
Tools			
Training			
Other			

Suggestions for improving existing operation: _____

_____

_____

_____

_____

Suggestions for developing additional processing activities: (meat, cereals, honey, fruit, oils etc.) _____

_____

_____

_____

_____

_____

18. Collaboration with UNIDO/FAO joint initiative

Would you be interested in contributing with input to the UNIDO/FAO project? (Y/N) ☐

What can you contribute with towards achieving goals of the project (time, labour, facilities, knowledge exchange etc.) ?

What key needs could be adressed by the project?

What priority actions could be taken by the project?

What are your expectations from the project?

ANNEX 11

QUESTIONNAIRE FOR DISTRICT/ SUB-DISTRICT – BACKGROUND DATA

UNIDO / FAO Joint Initiative

Cottage Industry Sector Survey in Thi Qar Governorate, Iraq

QUESTIONNAIRE FOR DISTRICT/SUB-DISTRICT BACKGROUND DATA REQUIRED

Rural Population District and Sub-District

District	Population January 2003	Rural Population (%)	Rural Population Interviewed
District			
Sub-district			
Sub-district			
Sub-district			
Sub-district			
Sub-district			
Total Interviewed Population			

Agricultural Area & Livestock

	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
No. Rural Households						
No. Rural Households Accessing Land						
Cultivable land (Ha.)						
Cultivated Land (Ha.)						
Cultivating Winter Crops (Ha.)						
Cultivating Summer/Permanent Crops (Ha.)						
No.Cows and						
No. Buffaloes						
No. Sheep						
No.Goats						
No. Poultry						

Total area cultivated with summercropsn (Ha.)

	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
Dates						
Fodder						
Vegetables						
Others						
Mais						
Oilseed						
Rice						
Fruits						
Others						

Total area cultivated with wintercrops (Ha.)

	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
Barley						
Wheat						
Vegetables						
Fodder						
Pulses						
Others						

Total Production / District - Summer

Crop	Total ha	Yield/ha.	Total Production
Dates			
Fodder			
Vegetables			
Others			
Mais			
Oilseed			
Rice			
Fruits			

Total Production / District - Vinter

Crop	Total ha.	Yield/ha.	Total Production
Barley			
Wheat			
Vegetables			
Fodder			
Pulses			
Others			

Number of Agricultural Machinery

	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
Tractors						
Combine Harvesters						
Seed Drills						
Fertilizer Sprayers						
Sprayers						
Water Pumps						
Irrigation Systems						

Possible interventions:

In general we are looking for an excess production which profitable could be turned into processed products.

- It could be due to peak seasonal production
- Perishable products
- Difficult in bringing the products to the market
- No or too small demand in the peak season when everybody produce the same products
- Competitive advantages (i.e. low production costs)

In the following we will amass data and information, which could give an indication of the areas where interventions could be made. We go threw the production processes for the different productions to see if there are any operations which can be improved by establishing a cottage industry which either produce a product or a service, which will improve the overall performance of the product.

Before you start asking the questions below you should ask what cottage industries District and or Subdistrict authorities see as possible for their area.

You should list them in order: For each suggestion you should ask for at least 3 reasons why this is a good idea.

Suggestions by the District / Sub-district for viable cottage industries in their area

Type of cottage industry	Reason 1	Reason 2	Reason 3

According to the agricultural production in the Governorate there are the following potential areas:

1. **Cereal: (Projects could be in improving production methods, i.e. mechanisation and or in cerial storage, processing, or marketing)**

1.1. Tools and implements (many operations seems to be carried out by hand)

1.1.1. Describe the main soil and cultivation proceses:

	Ploughing	Leveling	Furrowing	Harrowing	Sowing	fertilizing	pestcontrol	harvesting
Manual								
Animal								
Tractor								
Combine Harvestor								

1.2. Wheelbourough (transport of seed fertilizer), small carts and trailers etc.

1.2.1. Describe the main means of transport:

	Inputs from market	Seed To the field	Fertilizer To the field	Harvest To the field	Products to the market	Byproducts
Manual						
Animal						
Tractor						

1.3. Repair Shops

1.3.1. Are there any repair shops for tractors and machines in a distance of 30 km?

1.3.2. Name the location and the distance to the once in the Distance and sub-District (km.):

1.3.3. Is this too far for most farmers?

1.3.4. Can they make the repairs needed?

1.3.5. Model and type of tractors. List the 3 most commenly used tractors in the District/sub-district:

Name of Tractor	% of all tractors	Model	Size number of HP	Main reason for Repair 1	Main reason for Repair 2	Main reason for Repair 3

1.3.6. Model and type of Combine Harvestors. List the 3 most commenly used combine harvestor in the District/sub-district:

Name of Combine Harvestor	% of all Combine Harvestor	Model	Size number of HP	Main reason for Repair 1	Main reason for Repair 2	Main reason for Repair 3

1.4. Are there any Metal workshops which can produce some of the simpler pices of equipment needed for the repaire and simpel tools and equipment such as: plough sheers, harrows, leveling boards, forrowers etc in your area?
- 1.4.1. Distance and location of the metal workshop in the District, Sub-district (km.):
  - 1.4.1.1. Is this too fare for the majority of the farmers?
  - 1.4.1.2. Can they make the equipment needed?

1.5. Does the majority of farmers sell their grain to:
- 1.5.1. Government operated silos
- 1.5.2. Private operated silos
- 1.5.3. Where do the farmers buy seed (for sowing)

1.6. Storage silos,simpel cleaning equipment
- 1.6.1. Are there a need for storage silos and simpel grain cleaning equipment?
- 1.6.2. What is the loss of grain due to rot/mold, rodents, others in % of total harvest?

1.7. Milling, packing, transport, marketing
- 1.7.1. Does farmers sell flower direct to:
  - 1.7.1.1. The traders
  - 1.7.1.2. Wholesalers
  - 1.7.1.3. Bakers
  - 1.7.1.4. Retailers
  - 1.7.1.5. Consumers
- 1.7.2. Are there a need for milling capacity to serve local communities at:
  - 1.7.2.1. Farm level
  - 1.7.2.2. Associations, cooperatives
  - 1.7.2.3. Sub-district
  - 1.7.2.4. District level
- 1.7.3. Bread making
  - 1.7.3.1. Is there a need/possibility to improve the availability, varaity for bread making at the:
    - 1.7.3.1.1. Village level
    - 1.7.3.1.2. Small towns
    - 1.7.3.1.3. Sub-district level
    - 1.7.3.1.4. District level

1.7.4. Cookies

1.7.4.1. Is there a need/possibility to improve the availability, varaity for cookies, cakes and confectionarry at the:

1.7.4.1.1. Village level

1.7.4.1.2. Small towns

1.7.4.1.3. Sub-district level

1.7.4.1.4. District level

2. Vegetables (Projects could be in improving production methods, i.e. mechanisation, irrigation and/or in vegetable storage, processing, or marketing)

2.1. Tools and implements (most operations seems to be carried out by hand).

2.1.1. Describe the tools and implements used for:

	Ploughing	Leveling	Furrowing	Harrowing	Sowing	fertilizing	pestcontrol	harvesting
Manual								
Animal								
Tractor								
Combine Harvestor								

2.2. Wheelbourough (transport of seed fertilizer, produce), small carts and trailers etc.

2.2.1. Describe the main means of transport:

	Inputs from market	Seed To the field	Fertilizer To the field	Harvest To the field	Products to the market	Byproducts
Manual						
Animal						
Tractor						

2.3. Repair shops for tractors and machines. Is there any need for mecanised machinery for the vegetable production? (i.e. small hand operated mechanical cultivators)

2.3.1. Does workshops which can produce some of the simpler pices of equipment for irrigation exist? (Plasticpipes, valves, drippers etc.)

2.4. Production method used for:

	% of total Onions	% of total Okra	% of total Egg plants	% of total Tomatos	% of total Pebber /chilly	% of total Garlic	% of total Others
Freeland							
Freeland under datepalm							
Plastic tunnels							
Plastigreen houses							

2.5. Production of vegetables:

	Onions	Okra	Egg plants	Tomatos	Pebber /chilly	Garlic	Others
Total production (t/year)							
Yield/ha (Kg.)							
Amount consumed by house-hold (%)							
App. Production costs/ha							
Average farm gate price (1 kg)							
Best price obtained							
Loss in % of total							
Main reason for loss: -Harvest -Storage -transport							

2.6. *Is irrigation water limited?*

2.6.1. Give % of all farms where the irrigation water is too little for the demand

2.6.2. Does the well have limited capacity?

2.6.3. Is the water table too deep

2.6.4. Cost of irrigation

2.6.4.1. What is the cost of irrigating 1 ha of vegetables for 1 season?

2.7. Is there a need for conservation of vegetables? If yes what type?
   2.7.1. Coldstorage, simpel cleaning and grading equipment, packing, transport and marketing
   2.7.2. Canning
   2.7.3. Freezing
   2.7.4. Drying
   2.7.5. Cooking (i.e. sauces, pickels and relish)

3. Rice (Projects could be in improving production methods, eg mechanisation, irrigation and or in rice storage, processing, or marketing)

3.1. To whom does the farmer sell the rice:
   3.1.1. Government silos
   3.1.2. Private tradors
   3.1.3. Consumers
3.2. Does some farmers paraboil rice, inorder to sell direct to consumors?
3.3. Is there a need for packing, transport and marketing
3.4. Is there a farmers rice growing association?

4. Dates (Projects could be in improving production methods, eg mechanisation, irrigation and or in cerial storage, processing, or marketing)

4.1. To whom does the farmer sell the Dates:
   4.1.1. Government organisations
   4.1.2. Private tradors
   4.1.3. Consumers
4.2. Is there a need for improved:
   4.2.1. Harvesting methods
   4.2.2. Small collection centers
   4.2.3. Washing, grading and packing
   4.2.4. Marketing

5. Milk from cows, buffolows and sheep. (Projects could be for improving nutrition hence production and or in milkcollection, processing, or marketing)

5.1. Livestock production in the District

Livestock	Production t/year	Products/animal/ year (i.e. amount of milk, wool, eggs)	Consumption/ Household in % of total production	Markatable surplus
Cows				
Buffaloes				
Sheep				
Goats				
Poultry				

5.2. Quality control and fat messurement

5.2.1. What are the existing rouls regarding payment of milk in relation to bacteriological quality, and fat and protein content?

5.2.2. What is the concentration of animals threw out the District, sub-district?

5.2.3. Suggestions for locations for milk collection centres?

5.2.4. Possible small processing units: Butter, cheese and yogurth. (To limit transport, processing could take place in the area of production)

5.2.5. What products would be easily marketable?

5.3. Main feeding methods used

Livestock/ Fodder type	% fodder	% hig protein consentrate	% by-products	Natural pastures %
Cows				
Buffaloes				
Sheep				
Goats				
Poultry				

5.4. Feeding Problems:

5.4.1. Lack of rughage (fodder eg. Alfaalfa)

5.4.2. Lack of protein concentrate

5.4.3. Lack of quality by-products: i.e. not sufficiently cleaned

6. Wool and hides.

6.1. Type of projects:

6.1.1. Wool washing, cleaning, spinning, dying. Is this done in the District/Sub-district

6.1.2. Carpet weawing. Is this done in the District/Sub-district

6.1.3. Textil weawing. Is this done in the District/Sub-district

6.1.4. Drying curing salting, storage, marketing. Is this done in the District/Sub-district

6.1.5. Possibly tanning. Is this done in the District/Sub-district

6.1.6. Are wool and hides sold yes/no? If yes, to whom?

6.1.6.1. In Markets

6.1.6.2. To traders

7. Meat and fish

7.1. Type of projects:

7.1.1. Small scale common slaughter places/houses. Are there any in the District/Sub-district

7.1.2. Collection centers for fish. Are there any in the District/Sub-district

7.1.3. Cooling storage. Are there any in the District/Sub-district

7.1.4. Packing, transport and marketing. Are there any in the District/Sub-district

7.2. Animal Products – Production:

	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
Fish catched total (t/year)						
Fish consumed by local community (t/year)						
Fish for sale (t/year)						
Beef total production (t/year)						
Beef consumed by local community (t/year)						
Beef for sale (t/year)						
Goat & mutton total production (t/year)						
Goat & mutton consumed by local community (t/year)						
Goat & mutton for sale (t/year)						
Poultry total production (t/year)						
Poultry consumed by local community (t/year)						
Poultry for sale (t/year)						
Egg total production (t/year)						
Egg consumed by local community (t/year)						
Egg for sale (t/year)						

7.3. Marketing of animal products:

7.3.1. Are animals/fish sold live/fresh at markets

7.3.2. Are animals/fish sold live/fresh to traders

7.3.3. Are animals sold to Governement or private operated slaughter houses

7.4. Prices:

7.4.1. Livestock

Livestock	Price per kg. live ab. Farm	Price per kg. live at district market	Price/kg. slaughtered at district market	Price/kg. slaughtered at provincial market
Cows				
Buffaloes				
Sheep				
Goats				
Poultry				

7.4.2. Fish

	Price per kg. live ab. harbour/ place of catch	Price per kg. live/fresh at district market	Price/kg. at Provincial market
Fish			

7.4.3. Egg

	Price per kg. ab. farm	Price per kg. at district market	Price/kg. at Provincial market
Egg			

7.5. List the 3 main problems for farmers Producing and selling livestock, fish and egg!
- 7.5.1. First
- 7.5.2. Second
- 7.5.3. Third

8. Market collection points.

8.1. Establish small local collection points for agricultural products. (eg. Eeg, live or slaughtered chickens, vegetables, dates etc) where it can be, cleaned, graded, packed and prepared for market and or marketed.

9. Building material Type of possible projects:

9.1. Are there production in the District/Sub-district of? If yes
- 9.1.1. Clay bricks.
- 9.1.2. Clay tiles
- 9.1.3. Cement blocks
- 9.1.4. Concrete slaps, wall panels
- 9.1.5. Concret pipes
- 9.1.6. Reeds panel production
- 9.1.7. Wooden doors and windows
- 9.1.8. Metal doors and windows

9.2. Product details

Product details	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
Clay bricks total production (t/year)						
Clay bricks consumed by local community (t/year)						
Clay bricks for sale (t/year)						
Demand for Clay briks (t/year)						
Clay tiles total production (t/year)						
Clay tiles consumed by local community (t/year)						
Clay tiles for sale (t/year)						

Product details	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
Clay tiles demand (t/year)						
Cement blocks total production (t/year)						
Cement blocks consumed by local community (t/year)						
Cement Blocks for sale (t/year)						
Demand for Cement blocks (t/year)						
Concrete slaps, wall panels for sale (Pices or t/year)						
Concrete slaps, wall panels total production (Pices or t/year)						
Concrete slaps, wall panels consumed by local community (Pices or t/year)						
Concrete slaps, wall panels for sale (Pices or t/year)						
Concrete slaps, wall panels Demand (Pices or t/year)						
Reeds panel production (Pices or t/year)						
Reeds panel production total production (Pices or t/year)						
Reeds panel production consumed by local community (Pices or t/year)						
Reeds panel production for sale (Pices or t/year)						
Reeds panel production Demand (Pices or t/year)						
Wooden doors total production (Pices/year)						
Wooden doors consumed by local community (Pices /year)						
Wooden doors for sale (Pices /year)						
Demand for Wooden Doors (Pices /year)						
Wooden Windows total production (Pices/year)						
Wooden Windows consumed by local community (Pices /year)						
Wooden Windows for sale (Pices /year)						
Demand for Wooden Windows (Pices /year)						
Metal doors total production (Pices/year)						
Metal doors consumed by local community						

Product details	District	Sub-D	Sub-D	Sub-D	Sub-D	Sub-D
(Pices/year)						
Metal doors for sale (Pices /year)						
Demand for Metal Doors (Pices /year)						
Metal windows total production (Pices/year)						
Metal windows consumed by local community (Pices /year)						
Metal windows for sale (Pices /year)						
Demand for Metal windows (Pices/year)						

9.3. Location using clay constructions: Specify
9.4. Locations using bricks: Specify
9.5. Construction material

Construction material	Unit Specify	Price per unit At the producer	Price per unit at district market	Price/unit At Provincial market	Production costs Per unit
Clay bricks					
Clay tiles					
Cement blocks					
Concrete slaps, wall panels					
Concret pipes					
Reeds panel production					
Wooden windows					
Wooden doors					
Metal doors					
Metal windows					

10. Establishment of metal working workshops

10.1. Simpel mechanical repair shop
10.2. Complete metal working shop, incl. stainless steel welding, forging, lathe, sheet cutting, etc.

11. Establishment of wood working workshops

11.1. Simpel based mainly on hand tools
11.2. Mechanised wood work shop

12. Other process industries

12.1. Specify processing industry
12.2. Specify processing industry
12.3. Specify processing industry

ANNEX 12

AVAILABLE DOCUMENTS AND LIST OF NGOs

Project Documents

- *The Promotion of Cottage Industry in Rural and Urban Areas*, Project Proposal prepared by UNIDO / Food and Agriculture Organization of The United Nations, Vienna, July 2004
- *Project Implementation – Promotion of Cottage Industries in Rural and Urban Areas*, Draft work plan published by United Nations Industrial Development Organization, Amman, February 2005
- *Minutes of Meeting - Second Project Steering Committee for the promotion of Cottage Industries in Rural and Urban Areas*, Published by United Nations Industrial Development Organization, Amman, March 2005
- *Promotion of Cottage Industries in Rural and Urban Areas – FB/IRQ/04/001*, draft report prepared by Patrick Forrest for UNIDO, March 2005

Technical Documents

- *Technical Manual on Small-Scale Processing of Fruits and Vegetables*, published by Food and Agriculture Organization of The United Nations, Santiago, 1997
- *Rural households and sustainability: Integrating environmental and gender concerns into home economics curricula*, published by Food and Agriculture Organization of The United Nations, Rome 1994
- *Rural Processing and Preservation Techniques for Fruits and Vegetables*, published by Food and Agriculture Organization of The United Nations, Rome, 1998
- *Date Palm Products*, published by W. H. Barreveld in FAO Agricultural Sevice Bulletin No. 101 for Food and Agriculture Organization of the United Nations, Rome, 1993
- *Agricultural Marketing Resources*, CD-Rom published by FAO, Rome, 2004
- *How to Start Agro-Food Industries*, CD-Rom published by UNIDO and the French Ministry of Agriculture, Food, Fishing and Rural Matters, 2002

Other Documents

- *Project Fact Sheets for Iraq*, published by United Nations Industrial Development Organization, January 2005
- *Rural Household Survey in Iraq – Rural Socio-Economic and Needs Assessment Survey in Fifteen Governorates*, published by Food and Agriculture Organization of The United Nations, Amman, December 2004
- *Crop, Food Supply and Nutrition Assessment Mission to Iraq*, Special Report prepared by FAO/WFP, September 2003
- *Iraq - Country Review 2005*, Edited by Denise Youngblood Coleman and Mary Ann Azevedo at Country Watch Inc., Houston, 2004
- *Effective Policies for Small Business – A guide for the Policy Review Process and Strategic Plans for Micro, Small and Medium Enterprise Development*, Published by OECD, 2004
- *Iraq Marchlands Restoration Program*, Various documents obtained from www.iraqmarshes.org, published by USAID, April 2005
- *Overview of Key Industry Sectors in Iraq*, published by Iraq Investment & Reconstruction Task Force & U.S. Department of Commerce, June 2004
- *Reconstruction Weekly Updated*, published by USAID, February 9 – 15 April 2005

ANNEX 12 Continued

LIST OF NGOs IN THI-QAR AND LOWER SOUTH IRAQ (*Local NGOs)

ORGANISATION	ACTIVITY	ACTIVE IN THI-QAR
ACF	Water & Sanitation	
ACTED	Education, W&S, health education.	YES
Architects for People in Need (APN)	Rehabilitation, training in cleaning and maintenance, W&S, non-medical supplies.	
*Basrah Law School	Protection	YES
Bridge to Baghdad	PHS, rehabilitation	
CARE Australia (CARE int.)	Nutrition, W&S, rehabilitation of health facilities, Watson & health integrated projects.	
Caritas Iraq	PHS and Hospital care, nutrition, health infrastructure, rehabilitation.	
Catholic Relief Services	Supplementary feeding, health care, W&S, children and pregnant women.	
Danish Demining Group	Demining.	
Enfants du Monde-Droits de l'homme.	Support to vulnerable children & IDPs.	YES
*Engineers without Borders	Housing, shelter.	
GOAL	PHC, hospital care, health assessment, W&S, nutrition, emergency, training.	YES
Handicap Int.	PHC, hospital care, rehabilitation of health infrastructure, psychosocial support, physiotherapy and prosthesis.	
IMC	Health, nutrition, Watsan.	
International Consortium of Solidarity.	Composed by 21 Italian NGOs they are able to work in every field (Bridge to Baghdad previous presence).	
Inter SOS	Child protection, de-mining.	YES
IRC	PHC, public health, rehabilitation, W&S.	
International Medical Corps (IMC).	PHC, hospital, public health, nutrition, rehabilitation,	

ORGANISATION	ACTIVITY	ACTIVE IN THI-QAR
	emergency, training.	
Korean Platform (Global Care, Oasis of Love, Kyongi Doctors).	Hospital Care, public health, rehabilitation, watsan.	
Life for Relief & Development	PHC, hospital care, W&S	
MDM Greece	PHC, hospital, public health	(Currently Stopped)
MDM France	PHC, hospitals, IDPs.	
MDM Canada	PHC	
Middle East Council of Churches (MECC)	Food, nutrition, shelter.	
Millennium	Vocational Training	
MSF Holland	PHC, public health, W&S	
Norwegian Church Aid	Water Supply, Long term water rehab.	YES
Ockenden International	Protection, legal advisors.	
Operation Mercy	PHC, rehabilitation, nutrition.	
OXFAM	Health	YES
People in Need	Return monitoring district profiles	
Premiere Urgence	Rehabilitation, schools, training,	YES
Save the Children US & UK	Children	YES
War Child	Flood prevention, income generation, QIPs.	YES