

UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS (Habitat)
Settlements Rehabilitation Programme – Northern Iraq

Socioeconomic structure, vulnerability and development potential of Northern Iraqi rural settlement

By Paolo Santacroce
Rural Area Development Senior Consultant



Erbil/Venice 24.09.2001

Index

Overall Objective of the Consultancy	4
Summary of Duties	4
Activities carried out and partial/provisional achievements	5
TOR's duty 1	5
A. Matching different databases	6
B. Agroecological zonation using NDVI)	9
C. Village socio-.economic patterns	16
TOR's duty 2	23
TOR's duty 3	23
TOR's duty 4	24
TOR's duty 5	24

ANNEXES

Annex 1		
Ongoing matching databases contents		26
Annex 2		
List of Governorates, Districts and Sub-districts according to different dates and databases		31
Annex 3		
Instructions provided for matching FAO 1999, UNICEF 1997 and IKRP 2000 databases at village level		37
Annex 4		
Excerpt from TORs included in FAO, <i>"Towards a strategic framework for sustainable agricultural rehabilitation programme in the three Northern Governorates of Iraq"</i> , Rome, 2001		38

Overall Objective of the Consultancies

“To determine the socioeconomic structure, the vulnerability and the development potential of Northern Iraqi rural settlement.

*“To determine the
The study is essential for developing socio-economic indicators related to Resettlement program and to support decisions in resources allocation in urban areas”.*

“Particular emphasis shall be put on understanding the impact of WFP food provision program on rural settlement development patterns and on resettlement program”

Summary of Duties as in TOR

- 1. To produce a comprehensive study on all the significant factors affecting rural area life styles and habits, self-sustainability levels, population vulnerability and social needs. This study will be based on the collected information (satellite images and other information collected in the first phase) and on the data yielded by the ongoing Settlement and Household Survey.*
- 2. To evaluate the current rural/urban exchange profiles and the way these are affected by the current food ration system.*
- 3. To coordinate the study activities with the surveys and studies that are carried on with other UN agencies (WFP, FAO, UNOHCI).*
- 4. To design a rural area monitoring system that will allow updating on the basis of annual and seasonable time scheduling the accounting system on resources/pressure balance.*
- 5. To evaluate the outcomes of the study with the aims and objectives of Habitat’s mission in NI according to international agreements within the framework of the “Oil for Food” program.*

The consultancy was divided into two field periods (May and September 2001 (50 working days) and a working period spent in Venice (15 working days).

Itinerary first mission:

Venice\Wien\Amman	16.05.2001
Amman\Baghdad	16.05.2001
Baghdad\Erbil	18.05.2001
Erbil\ Suleimaniyah	20.05.2001
Suleimaniyah\Erbil	21.05.2001
Erbil\ Dohuk	22.05.2001
Dohuk\Erbil	24.05.2001
Erbil\Baghdad	07.06.2001
Baghdad\Amman	08.06.2001
Amman\Wien\Venice	09.06.2001

Itinerary second mission:

Venice\Wien\Amman	29.08.2001
Amman\Baghdad	30.08.2001
Baghdad\Erbil	31.08.2001
Erbil\Baghdad	22.09.2001
Baghdad\Amman	23.09.2001
Amman\Wien\Venice	24.09.2001

The above consultancy was a follow up of a previous consultancy carried out on February/March, 2001

Activities carried out and partial/provisional achievements

TOR's duty 1

To produce a comprehensive study on all the significant factors affecting rural area life styles and habits, self-sustainability levels, population vulnerability and social needs. This study will be based on the collected information (satellite images and other information collected in the first phase) and on the data yielded by the ongoing Settlement and Household Survey

BACKGROUND

During his previous mission (February/March, 2001) the Consultant

- collected, collated, revised and reaggregated into a **comprehensive Northern Iraqi rural area database** the most significant available information at Nahia (sub-district) level,
- produced a **first assessment on major pattern of farming activities** at Nahia level.

The availability of significant, but rather disorganised and not easily comparable, village databases [collected by other UN Agencies e/o NGOs] suggested the possibility, if and when consistently reorganized, of compiling **village profiles** in order to assist any rural [re]settlement activity.

Consequently the feasibility of matching the available databases was informally discussed at the end of the Consultant's first mission.

A matching test was conducted by the Consultant before coming back to Erbil. Because the results appeared meaningful (~ 70% of villages contained in the two most relevant [at least at the time being] databases matched), it was decided to implement it.

In the mean time, since then, the availability of village datasets is significantly increased. In particular the recent access to IKRP Village Database makes this objective more significant but at the same time more challenging.

At the same time it was confirmed the need of complementing survey/field information with remote sensing inputs.

The activities carried out during the present mission for both components (database and remote sensing component) are described here below.

A. MATCHING DIFFERENT DATABASES

It was decided to match, at village level, the following databases:

1. FAO Coordination Office for Northern Iraq, "*Village Statistics Survey for the Year 2000*", Erbil, 2000 (since now: **FAO99**)
2. UNICEF, "*MoRaD Survey Database*" (since now: **UNICEF97**)
3. Iraqi Kurdistan Research Programme, University of Durham, DFID, "*IKRP Multi-sectoral Village 2000 Survey*" (since now: **IKRP2000**)

The major problems hampering the implementation of the matching activities are mainly due to (only the most crucial reasons are listed):

- Several English spelling criteria are used for translating village names, in many cases different criteria are used in the same database. As a consequence only ~10% of village names perfectly matches and can be identified through simple computer implemented procedures [i.e. querying approaches].
- Identical or similar village names are frequently found; sometimes it happens in the same administrative areas.
- Because the three databases make reference to different years not necessary the villages are the same: there are abandoned villages, new villages, villages that in the meanwhile changed their names.
- The above problems are in many case complicated by the shift of NI internal administrative boundaries; and this fact can be rather critical, as in case that in the databases the belonging to the same administrative unit offers the only criteria for decision/validation.

As a consequence the following strategy has been defined:

1. To define the FAO99 village name list as the primary-key (offering more and probably "more reliable" information related to some key-words as defined in the TORs). The FAO99 file contains **4972 villages**.
2. To execute a first match with UNICEF97 (as it is already available in a recompiled form). This last file contain **4760 villages**.
3. To define and implement procedures for matching the results of the previous point 1 and 2 with IKRP2000 database, once ended its overall translation from Arabic. This file contains **4860 villages**.
4. Finally the **final three sources village database (3S_V)** will be georeferenced matching its village names with Latitude/Longitude information available from two GIS database:
 - FAO Mapinfo georeferenced village name list (since now: **FAO_LAT_LON**)
 - UNOPS MINA Mapinfo georeferenced list of village names¹ (since now: **LADE_LAT_LON**)

As, in spite of their better quality, the ONOPS layers are not available for the whole NI (and are not expected to be available is a short-middle term), georefencing procedure will by guided by FAO file and only in case of necessity by UNOPS file.

The remaining (not matching) village records are saved in a "bin" database that will be "refished" in order to find "lost" villages.

¹ A new "point LADA layer" has been compiled by the Consultant starting from the original "polygon LADA layer", as it was rather inconsistent.

ADOPTED MATCHING CRITERIA

Considering the difficulties deriving from phonetic criteria, data collection time-lag and boundary-change, and in order to assure a rather large number of matching villages, the following criteria have been adopted;

1. Automatic matching by Governorates (through query or sorting procedures guided by administrative criteria when District and sub-district links are available).
2. Phonetic criteria (when names translated from Sorani, Badini and Arabic), guided - when possible - by administrative criteria.
3. When similar names are found in the same administrative area, some dimensional comparison of the village population at the three dates (1997, 1999 and 2000) can be helpful.
4. Last but not least, local knowledge (particular in cases of villages partially or totally changing their names)

IMPLEMENTATION AND PARTIAL ACHIEVEMENTS

As it was decided to implement the matching procedure through local personal, the Consultant interviewed many surveyors already in the Habitat FO rosters in Suleimaniyah (May, 20-21st) and Dohuk (May 22-23rd)

Two suitable candidates were identified in Suleimaniyah and immediately they started the job. Only one suitable candidates was identified in Dohuk but his recruitment got an administrative stuck.

In the case of Erbil Governorate database the first two steps of the matching procedure (FAO99+UNICEF97) was carried by the Consultant assisted by the local Habitat Erbil Office personal.

As far as the achievements, the updated results are as follows:

Governorate	FAO99-UNICEF97 matched villages	% of FAO99 villages
ERBIL	937	79.4
SULEIMANIYAH	1191*	70.6*
DARBANIKHAN	502*	59.0*
DOHUK	still pending	still pending

updated 06.06.2001

The lower rate for Darbanikhan seems to be due to significant shifts of the administrative boundaries. We can expect that a "refishing" from the so called "bin database" [not matching villages at Governorate level] will significantly increase its percentage.

Consequently we can foreseen that, at the end of the day, the final three sources village database (3S_V) will include at least 3300 villages.

RECOMMENDED ACTIONS

A.

In order

- to complete the FAO99-UNICEF97 matching (particularly for the Dohuk Governorate),
- to match the resulting database with the recently received IKRP2000 database

a local skilled person must be recruited and receive appropriate instructions from the Consultant. It is expected that, in principle, he could complete the above assignment in about one month².

The final results will be sent by e-mail to the Consultant in Venice (Italy) for counterchecking and verification.

B.

The consistency of the **3V_S database** will be verified through logical test and GIS techniques by the Consultant, still in Venice. He will identify the major bias to be investigated, if existing, when again in Erbil (beginning September).

C.

It is evident, from the described procedure, that the **3V_S database** will not include the totality of the NI villages, but –nevertheless- will provide a powerful basement for the **design of any rural area monitoring system** as requested by **TOR's point 4**.

EXPECTED OUTOCOMES

- The 3V_S database will be processed using multifactorial techniques in order to identify the **most relevant village typologies**³. During the current mission a part of the on-building database has been tested and processed in order to facilitate a smoother approach at the occasion of the overall data analysis (September 2001).
- A significant contribution to the definition of village typologies will be provided by the outcomes of the ongoing NDVI (Normalised Difference Vegetation Index) images analysis. → see next paragraphs.
- It is expected that, as soon as the SHS (Settlement and Household Survey) will be processed, the information extractable from the farmer questionnaires will improve the definition/identification of village typologies.
- The overall outcomes of the previous three bullets will make up the backbone of the overall **"study on the significant factors affecting rural areas"** as requested by TOR.
- Nevertheless it seems evident, since now, that few peculiar questions will not find adequate answers from the 3V_S database and the SHS (i.e. partime agricultural activities, nomadic system, livestock smuggling system, land tenure regimes).
- Consequently **it is recommended since now to foreseen the possibility of using RRA techniques** for a better understanding few relevant questions related to Habitat intervention in the expected resettlement operations:
 - **the identification of existing hidden income generation activities, that could be strengthened in the future,**
 - **the land ownership structure that seems not always encouraging farmers to invest, a phenomena that could seriously hamper any sustainable resettlement in rural areas.**

² A margin of risk is still represented by the final step of the matching procedure (LAT_LON) as the procedure has not yet been fully tested.

³ at least according to the domains covered by the three original databases

B. AGROECOLOGICAL ZONATION USING NDVI (Normalised Difference Vegetation Index)

As indicated in TOR's point 1, the Consultant has been requested - through a rather sophisticated data processing of NDVI⁴ remote sensing images - to provide significant indicators assisting in the identification of the

- **agroecologically at risk areas**
- and the **most suitable ones**.

The advantage of the remote sensing information, when compared with survey information, consists mainly in the fact of being unequivocally geographically identified. Nevertheless this information, if not matched with information collectable through surveys, can lose most of its potentiality⁵

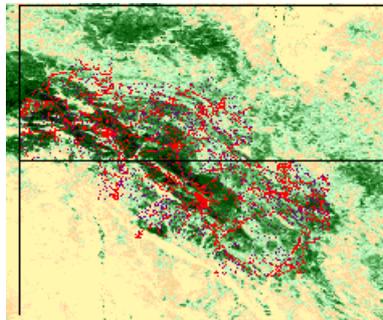
Processing a consistent dekadal⁶ NDVI images time-series, the Consultant has computed a set of NDVI images including:

- NDVI interannual overall average, minimum and maximum⁷
- NDVI interannual dekadal averages

Already on June 2001 a **synthesis image** was produced according to the following definition:

$$\text{NDVI Delta} = \text{NDVI maximum} - \text{NDVI average}$$

The NDVI Delta image showed, through a locally calibrated palette, **the potential blossoming of greenness**.



Nevertheless, in order to produce an agro-ecological zonation, a more sophisticated data processing has been carried out using NDVI interannual dekadal averages.

⁴ The Normalised Difference Vegetation Index (NDVI) is a measure of the amount and vigor of vegetation as observed by NOAA satellites; and processed by NASA.

The NDVI from (NOAA) AVHRR sensor is calculated according to the formula:

$$\text{NDVI} = (\text{NIR} - \text{VIS}) / (\text{NIR} + \text{VIS})$$

where: NIR = near-infrared (channel 2); VIS = visible (channel 1)

The NDVI magnitude is related to the level of photosynthetic activity of the observed vegetation.

⁵ Let make an example particularly significant for any Resettlement Planning Activity: in the peculiar case of NI (that probably it is not so peculiar if you think about other territories/countries affected by man-made disasters) the identification of land potentiality in term of length and level of growing periods (detectable through NDVI images) can be meaningless if not interfaced with a precise identification of the still mined areas.

⁶ "Dekadal" means in technical terms: 10 days; not to be confused with "decadal" = 10 years

⁷ The major outcomes were included in: Paolo Santacroce, BTO Report, second mission (May 16th – June 9th, 2001), see - in particular- pages 9-14.

The map full set was provided to Habitat Core Team Office (Erbil) in digital and print-out format on June 2001.

A full set of 36 dekadal images (from the first of January to the third of December), each of them containing the interannual average related to that specific dekad, has been processed using ADDAPIX, an “ad hoc” software for “Pixel-by-Pixel Classification for Zoning and Monitoring” written by Prof. Silvio Griguolo (University of Venice) and distributed by FAO⁸.

The basic assumption is that the interannual average can – to some extents – represents the “normal”, or the most probable biomass level (minimizing the interannual variability due to weather hazards).

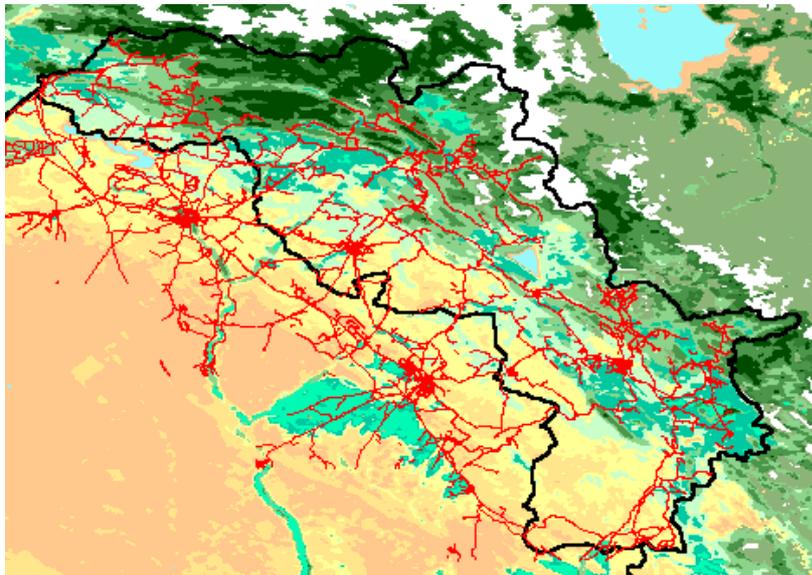
Using a rectangular window (including a part of Iran up to Tabriz and the eastern part of Ninawi and at Ta'min Governorates) an agro-ecological classification has been carried out in order to identify the most relevant vegetation cycle typologies of the area.

After several attempts, in order to define the best number of clusters (according to the criteria of identifying a sufficiently disaggregated vegetation cycle typologies comparable with the overall general agro-ecological environment) **13 typologies has been identified.**

The visual results are shown in the maps here below, where:

- The “warm” colours (light brown, yellow) represent the arid and semiarid areas (extremely low, and low vegetations cycle profile),
- The “cold” colours (from light green to different dark green (different = with more or less a “warm” component) show different types of areas suitable for agro-pastoral activities (middle and high vegetation cycle profiles).
-

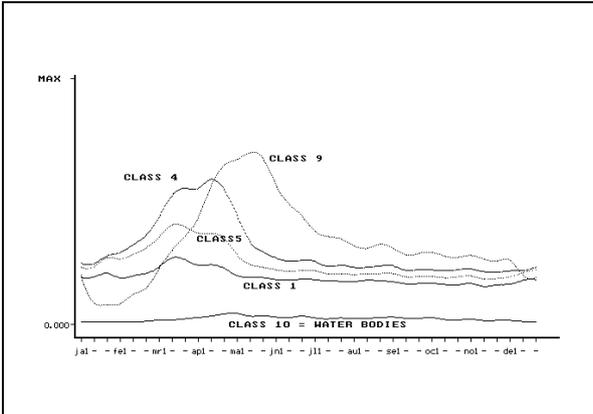
The above printout is extracted from a digital map annex to this “Final Report”. The digital map can be queried with many standard softwares. Nevertheless – as it is in IDA format - it is be easier for the user to query running WINDIP software⁹



⁸ For an extensive documentation and for unloading the software see:
<http://metart.fao.org/T&I/GBR/Tools/eaddapix.htm>
or
<http://cidoc.iuav.it/~silvio/addapix.html>

⁹ For a general information on WINDISP, a “user-friendly, Windows-based software for satellite image display and analysis”. see:
<http://www.fao.org/WAICENT/faoinfo/economic/giews/english/windisp/windisp.htm>
The software can be downloaded from the FAO SD (Sustainable Development) site:
<http://metart.fao.org/T&I/GBR/Tools/ewindisp.htm>
For any up-dated version see:
<http://ag.arizona.edu/~epfirman/>

In the following pages a general description of the most relevant typologies, including their graphic patterns, and few self-evident printouts are provided.



The graph set here aside shows the dekadal path of the average vegetation index (NDVI).

Class 10: water bodies (lakes, in cyan)

Class 1 defines the extremely arid areas where the changes of biomass level during the seasons are not at all relevant (in light orange)

Class 5 identifies the arid areas where some seasonal vegetative cycle can be observed, nevertheless the cropping activities are rather impossible, excluding particular circumstances excluding particular circumstances ("cuvette" planting system, in depressions).

Class 4 includes poor vegetative areas, where cropping activities are practiced, but

performances are strongly submitted to wheater/climatic hazards. In this areas wheat, in general, is a more risky cereal crop than barley.

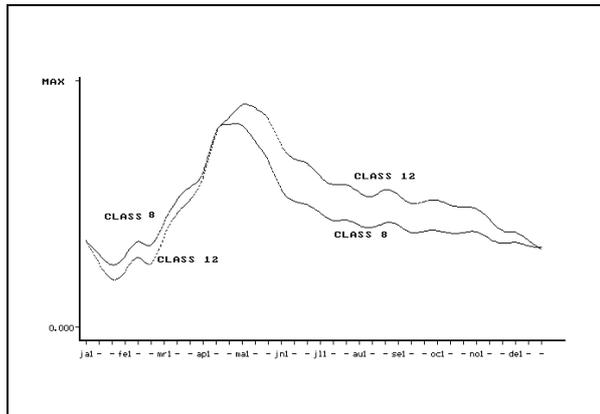
Class 9: a typology seldom occurring in Northern Iraq and – on the contrary – frequently found in Iran, the NDVI maximum level is observed two months later than for the previous typology. In Northern Iraq this typology is observed only at high altitude.

The next graph shows the profiles of clusters with a more reliable biomass cycles. It is a fact that, while at the beginning of the year the biomass level is extremely low, during the spring it rapidly increases and reaches a significant maximum at the beginning of the summer.

But the most important characteristic of these clusters is represented by a continuity of soil moisture conditions during the entire summer period.

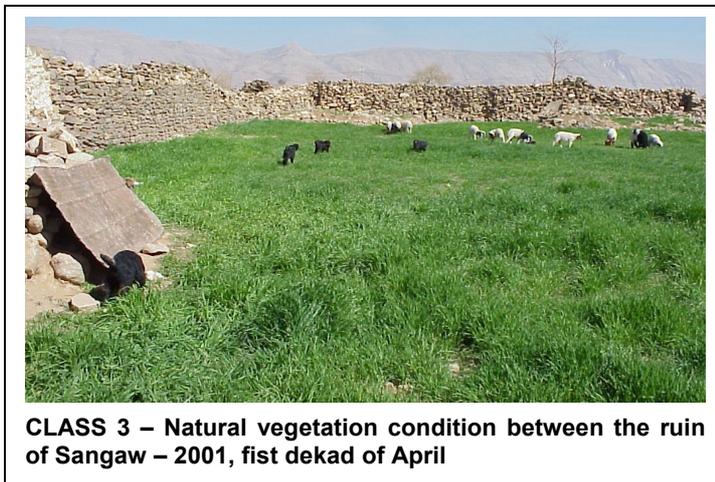
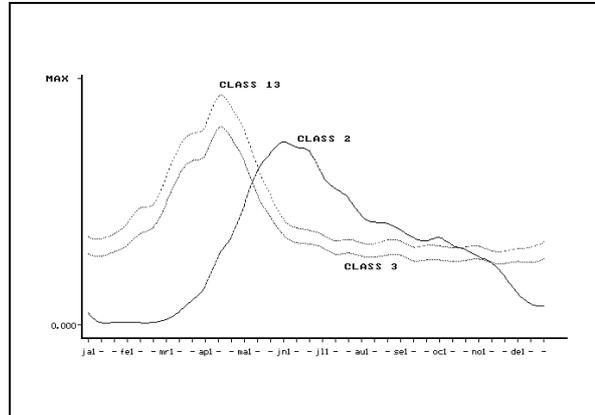
Both **classes 8 and 12** described similar trends, at different vegetation levels.

For example the landscape of the internal agricultural area of Dohuk Governorate belongs to **both classes**: the NDVI lowest values between January and February are probably, at least partially, due to the snow.



Class 12: The snow is affecting the low NDVI level near Atrosh second dekad of February 2001

Classes 2, 3 and 13 show similar shapes, defined by a short and intensive growing season. The differences between **Class 3 and 13** are mainly due to the levels on NDVI (class 13 appears as a translation of the same shape along to y axis): certainly area included in class 13 can offer better soil moisture opportunities (*ceteris paribus*).

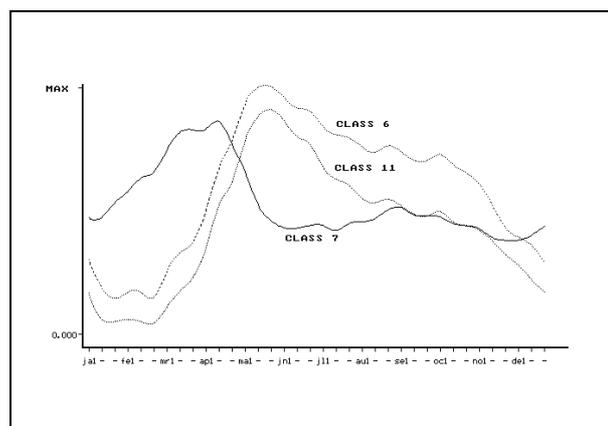


CLASS 3 – Natural vegetation condition between the ruin of Sangaw – 2001, fist dekad of April

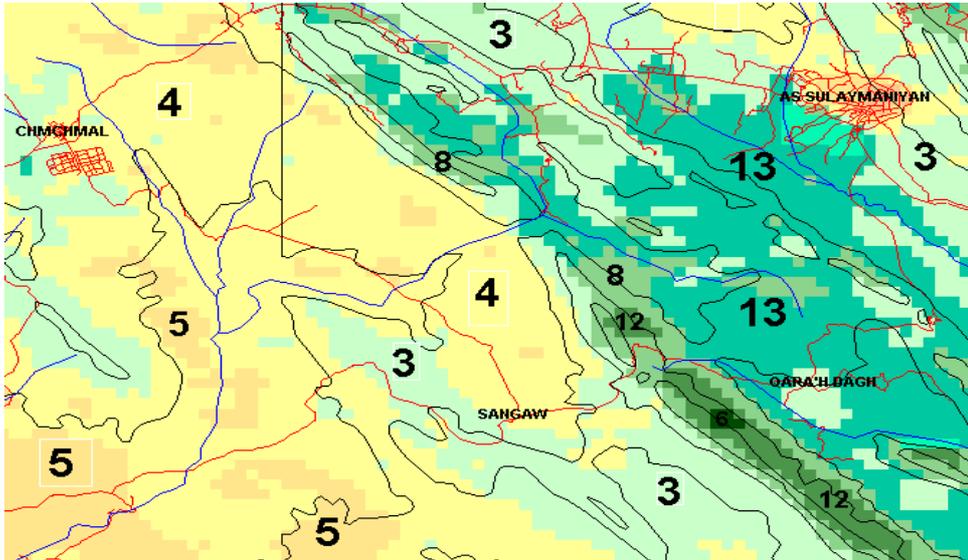
Consequently it is expected that class 13 areas are –for instance- more suitable for wheat than class 12 areas (where barley can constitute an alternative crop). **Class 2** introduces a different pattern; following an extremely low level the blossoming of the greenness can later, not reaching the class 13 same maximum but remaining high for a longer period.

The last set of clusters includes the two highest NDVI patterns, they are also similar in presenting a delayed start of the growing season; nevertheless **Class 6** show a persisting condition of soil moisture conditions up to the beginning of the Autumns; while **Class 11** decreases more drastically.

A completely different pattern is drawn **Class 7**, with an evident possibility of a double season, under the obvious condition of planting in the second season type of crop with lower water satisfaction need.



In the following pages few commented examples of the classified map are presented.



The classified map shows the Sulaimaniyah areas up to Chamchamal. A significant set of NDVI cycles is present in this window.

Class 4 and 5 are prevalent on the **south-west of Qara'dagh fault**.

In 5 cropping activities are rather impossible, excluding particular circumstances ("cuvette" planting system, in depressions).

In 4 cropping performances are strongly dependent from weather/clime hazards.

The Qara'dagh fault (eastern side) is characterised by classes 12, 8 and (on the top, class 6).

It is a fact that, as already explained, **class 8 and 12** show very similar shapes: at the beginning of the year the biomass level is extremely low, during the spring it rapidly increases and reaches a significant maximum at the beginning of the summer. Soil moisture conditions continue during the entire summer period. It is worth to be noted that in Sulaimaniyah there is still an intention to build a summer leisure station in this area.

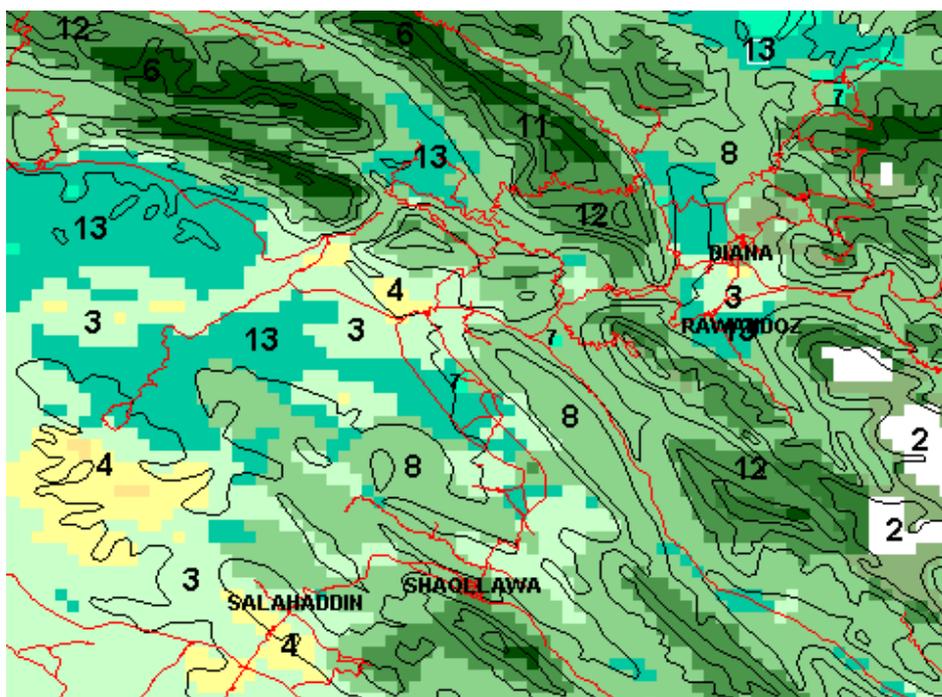
The small area classified as **class 6** emphasise the patterns of the previous ones: soil moisture condition persists up to the beginning of Autumn.

On the **north-west of Qara'dagh fault** class 13 is prevailing and combined with class 3.

As already noted in the general description of the class main patterns, both classes are defined by a short and intensive growing season.

Class 13 insists on the wetter areas and, as noted, wheat is prevalent (see typological village classification).

Class 3 is more characterized by a co-presence of wheat and barley.



This classified map showing the Erbil Governorate central area, from Salahaddin to Diana (Soran), provides a good example for better understanding the meaning of many vegetation cycle typologies.

The above image can be considered an extraordinary demonstration of the results that can be obtained processing NDVI images with an "ad hoc" rather sophisticated software.

Let have a glance to a very familiar place for everybody: to climb to Salahaddin coming from Erbil and the downhill to Shaqlawa: the different landscapes are classified as **class 4** (wester side) and **3** (eastern side).

Worth to be noted is also the finger shape of the topographic contours on the left side of the image, denoting erosion strong phenomena, classified as an arid area (class 4).

Classes 8 and 13, already described in the previous image, prevail in the internal area when slopes are not steep. The photo shows a class 8 area at the end of February 2001, a nomadic habitat can be noted.

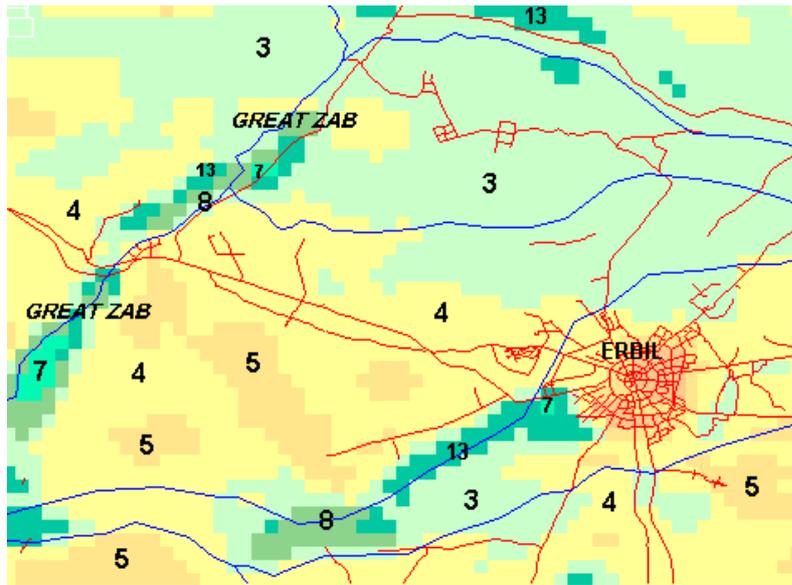
Also the sequence: **classes 8, 12, 6** has been already explained. A new typology (class 11) appears sometimes on the western side of the mountains: **class 11** is similar to class 6, but its biomass decrease more drastically through the summer time (partially due a longer exposure to sunshine)

Some spot of **Class 7**, identifying the existence/possibility of a double season, can be detected.

Class 2 confirm the snow effects during the winter and a very late blossoming of the greenness (max in June).



A final example offers the opportunity of detecting **class 7** along the Great Zab west of Erbil, with opportunities of a double season.



C - VILLAGE SOCIO-ECONOMIC PATTERNS

Collecting and collating village information from several available sources, and having computed several significant indicators, a data matrix has been compiled including 2228 villages and 32 indicators.

Socio-economic indicators (2228 villages)	
Description of the record	
WEIGHT Village total population	
ACTIVE INDICATORS (variables)	
1	arable land / total land %
2	not arable land / total land %
3	natural pasture / total land %
4	irrigated land / total land %
5	"buar" (fallow) / total land %
6	wheat cultivated land / arable land %
7	barley cultivated land / arable land %
8	chickpea cultivated land / arable land %
9	lentil cultivated land / arable land %
10	winter vegetables cultivated land / arable land %
11	summer crops and vegetables cultivated land / arable land %
12	wheat cultivated land / arable land %
13	wheat + barley cultivated land / arable land %
14	chickpea + lentil cultivated land / arable land %
15	chickpea + lentil c.l. / wheat + barley c.l. %
16	weighted livestock per capita
17	cow & buffalo / sheep & goat (weighted) ratio
18	weighted livestock per farmer
19	sex ratio (M/F)
20	population under 5 years % (1999)
21	population under 6 years % (2000)
22	available dependency rate (<6&>65)
23	family average dimension
24	primary school pupils not enrolled % (2000)
SUPPLEMENTARY INDICATORS (variables)	
1	poultry per capita
2	bee hives per capita
3	poultry per farmer
4	bee hives per farmer
5	primary school children not enrolled % (1999)
6	handicap / total population x 10,000
7	handicap by birth / total population x 10,000
8	handicap by mines / total population x 10,000

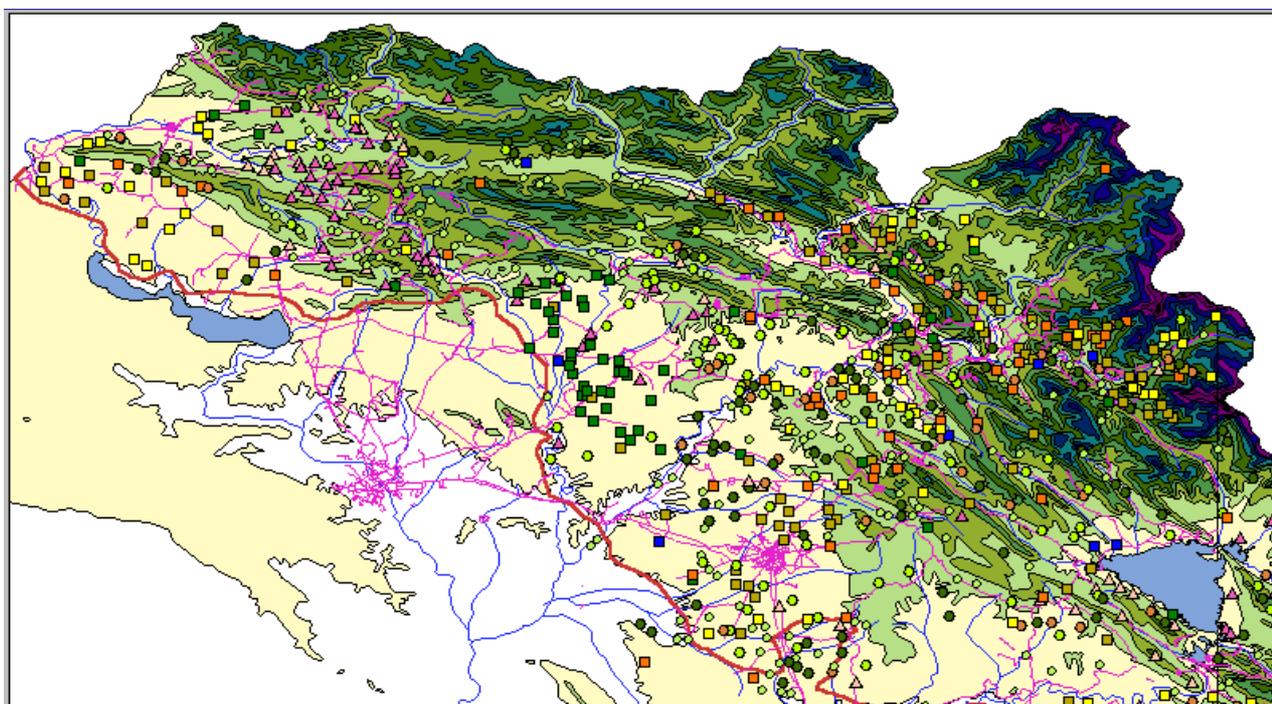
The data matrix has been processed by a “**Principal Component Analysis -> Not Hierarchical Cluster Analysis**” technique¹⁰, splitting the full set into two sub-set: of which 24 indicators considered as active variables and the remaining 8 as supplementary ones. The content of the final matrix is listed here below (the indicators names are shorted).

The **2228 villages** have been classified into 11 clusters. The distribution of the considered total population into the 11 clusters is shown here below:

¹⁰ Using ADDATI package (University of Venice, Italy), special version compiled for WFP/VAM (Vulnerability Analysis Mapping Unit). For more information the author of the package can be contacted: Silvio@iuav.it.

SOCIO-ECONOMIC CLUSTERS	1	2	3	4	5	6	7	8	9	10	11
NUMBER OF VILLAGES	303	252	214	152	158	150	380	220	100	93	206
considered population (%)	15.3	9.4	3.3	6.5	5.2	11.2	17.2	7.6	6.2	7.9	10.3

The emerging 11 typologies are sketched in the next pages (for a better quality and enlarged printout see annex xxx) Nevertheless the users can access to a MapView project (xxxx.apr) distributed as annex to this Final Report, and browse into the village classified map.



The above project allows the user to browse into the full indicators set (utilized for the classification) and produce/prints it own maps.

The project includes the possibility of overlay other themes (road, rivers, different types of administrative boundaries, and so on).

Here aside the legend is presented.

Village typologies	
●	1 pasture, only cereals
▲	2 balanced crop mix (cereals-legumes)
◇	3 pasture, barley, ovine
■	4 mostly barley, < arable land
▲	5 chickpea & lentil
■	6 barley & wheat
○	7 << arable land
■	8 mostly barley - more "bur"
■	9 irrigated, summer crops
■	10 mostly wheat
●	11 pasture, balanced crop mix

To facilitate the user in identifying the most important patterns, a simplified explanation is added to the symbols.

The following symbols and colour patterns criteria have been adopted:

for symbols

SQUARE = cereal crops prevalent¹¹

TRIANGLE = mainly legume prevalent

DIAMONT = pasture prevalent

CIRCLE = prevalent not arable land

while for colours patterns:

from prevalent wheat to prevalent barley: from dark green to brown through yellow

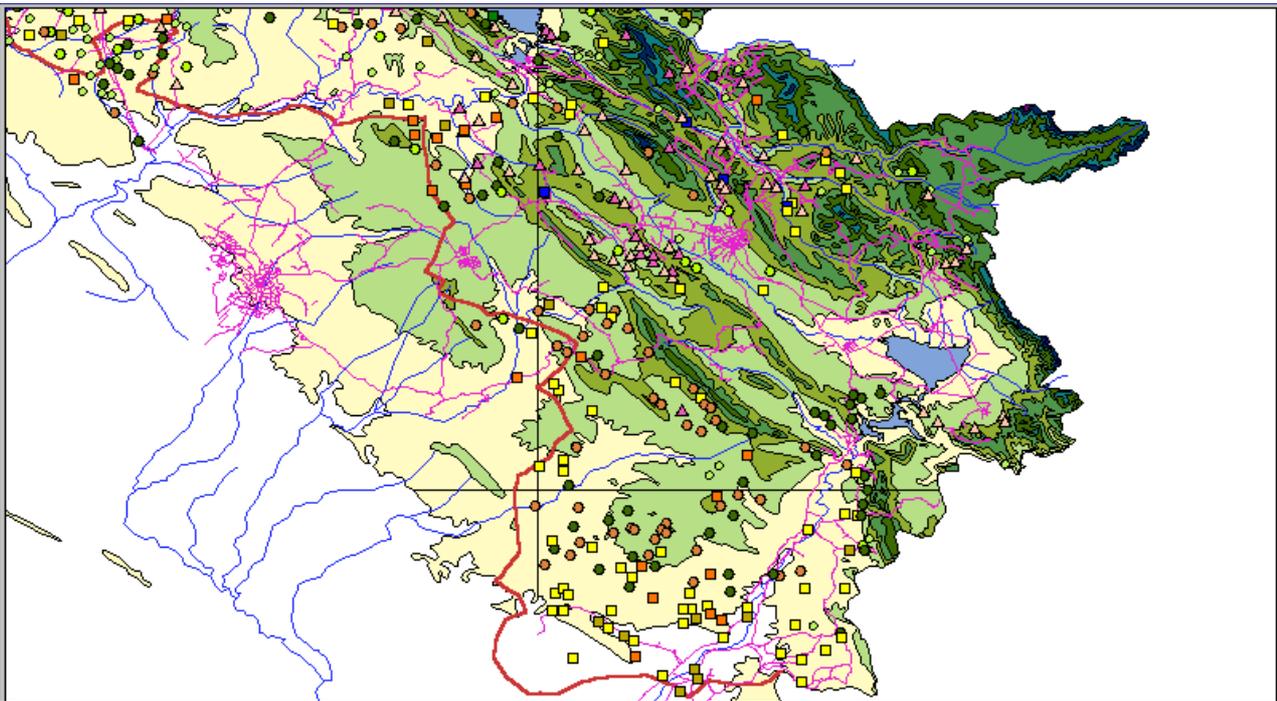
for prevalent legumes: from hot yellow to brown

for pasture: associated only with cereals (dark green),
associated with balanced crops mix [cereals-legumes] (light green)
associated with barley and ovine (light brown)

blue marks the presence of irrigation and important summer crops

¹¹ When compared with the average of all the analysed villages

The southern part of Northern Iraq is shown here below:



To facilitate the reading, the legend is repeated here aside.

- ✓ Village typologies
- 1 pasture, only cereals
 - ▲ 2 balanced crop mix (cereals-legumes)
 - 3 pasture, barley, ovine
 - 4 mostly barley, < arable land
 - ▲ 5 chickpea & lentil
 - 6 barley & wheat
 - 7 << arable land
 - 8 mostly barley - more "bur"
 - 9 irrigated, summer crops
 - 10 mostly wheat
 - 11 pasture, balanced crop mix

It is enough a quick glance to the cluster profiles to note that the 11 clusters can be reconsidered in the following way:

**Clusters with a relevant percentage of arable land (area)¹² (clusters 9, 10, 6, 8, 5)
versus
clusters with a high pasture area component (clusters 1, 11,3) or a “not arable” component (cluster 7)**

Obviously, each cluster is characterised by its own peculiarities. While the cluster quantitative profiles are summarised in the next page, here below some qualitative description is provided for the most relevant clusters ..

For instance **cluster 9** is peculiar for the importance of arable area (cluster average: 81.8% of the total area)¹³, and in particular for its irrigation destination (56.2%). The “buar” (fallow) practices are seldom used (1.1% of arable land)¹⁴. The Crop mix (when considering the two main cereals and legumes) is rather similar to the Northern Iraqi average¹⁵.

The Summer Crops and Vegetables component is highly significant; and the Winter Vegetables one too.

In the mean time this cluster is characterised by a rather low importance of animal raising activities, in which the preponderance of big ruminants (bovines)¹⁶ is evident.

Cluster 10 shows a similar profile in term of percentage of arable land, with wheat and chickpea predominance.

The area planted with barley, when compared with the wheat one, is rather insignificant (about 1/7) while significant is the importance of legumes (near 1/3) when compared with cereals. “Buar” (fallow) practices are current (19.4% of arable land)

This cluster too is characterised by a rather low importance of animal raising activities, in which the preponderance of bovines is prevalent.

Worth to be noted that the dependency rate is significantly high.

Cluster 6 is mainly a cereal crop area, where the barley component assumes a very important role; while the legume component is insignificant.

¹² It must be noted that in the clustering procedure village population has been used as a weight, and not the area; as the aim was to analyse the concomitance of agro-ecological, demographic and social patterns. Nevertheless a comparative test, using the total area as a weight, has provided similar cluster results. **VERIFY**

¹³ In the following pages the land use percentages make reference (if not extremely declared) to a specific land use amount as compared with the total area (including forest and not agricultural uses).

¹⁴ For the cluster analysis the importance of “buar” was defined by the indicator: buar area/total area x 100. If we consider only the arable land, the importance of the “buar” practice increases significantly.

CLASS1234567891011overall profilebuar/arable%23.918.7833.8929.1610.3320.9565.7661.321.0919.6412.3024.31

¹⁵ The average importance of the main four crops mix, when compared with total arable land, and when computed from the 2228 villages figures considered in this study is as follows:

Wheat	30.7%	Barley	17.2%	Chickpea	8.1%	Lentil	0.8%
-------	-------	--------	-------	----------	------	--------	------

Which corresponds in terms of crop mix to:

Wheat	54.0%	Barley	30.3%	Chickpea	14.3%	Lentil	1.4%
-------	-------	--------	-------	----------	-------	--------	------

The above crop can be compared with that extractable from the FAO Northern Iraqi Agricultural Statistics (making reference to the same agricultural year):

Wheat	59.4%	Barley	25.3%	Chickpea	15.5%	Lentil	0.8%
-------	-------	--------	-------	----------	-------	--------	------

The above very similar crop mix profiles marks a point in favour to the fact that our 2228 villages can be considered a good sample of the rural agro-ecological environment.

¹⁶ The livestock information, originally available by head, has been weighted according to the ratio between the prices of each type of livestock. Big ruminants (or bovines) include cows and buffalos, ovine include sheep and goats.

In this area too the farmers are used to practice “buar” strategies (21% of arable land). Animal raising activities are not too much important, nevertheless –when compared with the previous clusters- the ovine component is higher.

Cluster 8 is still important in terms of percentage of arable land (60%) but of which 61.3 is on “buar”. In this environment the pasture areas are significant (19.4%), a fact confirmed by the importance of animal raising activities characterised by a strong presence of ovines.

As far as it concerns cereal crops, they are not too much important but in their crop mix the barley component is significantly high.

It's not surprising if we consider the importance of the pastoral component in this area. An additional concomitant pattern: this cluster registers the higher children not-enrolled rate.

Cluster 5 shows relevant changes in terms of crop mix: the main two legumes (chickpea and lentil) occupies appreciatively the same quantity of arable land as it's done by the main two cereals (wheat and barley).

Land used as pastoral area is significant (19.9% of total area); with the concomitant presence of animal raising activities. Not surprisingly the ovine component is relevant.

Worth to be noted that this cluster registers the higher rate of handicaps by birth, probably due to an overall underdeveloped environment.

Cluster 2 includes intermediate areas in the dichotomy land use structure: arable land versus pastoral ones.

The importance of wheat areas is similar to the previous cluster 5, however the role of pulses should not be underestimated.

Cluster 4 shows a high percentage of “buar”, but the main pattern come from the fact of being the cluster with the highest dependency rate.

Clusters 1, 11 and 3 are characterised by high percentages of pasture area while **Cluster 7** is characterised by a high percentage of “not arable” land.

It is obvious that the above extremely simplified short description of some peculiarities of each cluster don't substitute a more in depth description of each cluster profiles. But, as already explained, the map immediate goal was to assist the HHS Core Team in geographical sampling.

It is a fact that the obsolescence (1997) of some of the indicators call for a **certain caution** in the interpretation of the profiles; particularly for socio-infrastructural aspects.

The Consultant hopes that it will be possible to **access to more recent information** (particularly on socio-infrastructural domains) and consequently the meaningfulness of the above map will significantly improve.

DESCRIPTION OF THE 11 SOCIO-ECONOMIC CLASSES (part A)

CLASS	9		10		6		8		5		2	
NUM of villages	100		93		150		220		158		252	
ACTIVE VARIABLES												
1 ara%	81.81	++++	79.40	++++	81.63	++++	60.79	++	50.33	++	33.26	--
2 noara%	5.82	--	9.44	--	6.32	--	8.25	--	9.96	--	18.69	~~
3 past%	4.76	--	6.32	--	6.32	--	19.43	~~	19.89	~~	20.44	~~
4 irri%	56.22	++++	6.09	~~	4.80	~~	3.94	--	3.60	--	4.85	~~
5 buar%	0.89	--	15.59	++	17.10	++	37.28	++++	5.20	--	2.92	--
6 Wh%ara	29.15	~~	47.85	++	40.60	++	16.82	--	28.90	~~	33.06	~~
7 Ba%ara	10.77	--	7.40	--	30.36	++++	12.81	--	13.41	--	19.47	~~
8 Ch%ara	7.44	~~	15.56	++	1.78	--	2.39	--	35.18	++++	20.58	++++
9 Le%ara	0.49	~~	0.18	--	0.20	--	0.30	--	2.13	++	2.08	++
10 WiVE%ara	4.21	++	1.08	~~	1.16	~~	0.74	--	1.01	~~	2.79	++
11 SaCr+Ve%ara	65.44	++++	7.40	--	4.99	--	3.98	--	7.61	--	15.31	~~
12 WhBar ratio	5.89	~~	29.54	++++	2.13	--	2.28	--	14.36	++	3.73	~~
13 WiBa%ara	39.92	--	55.25	++	70.97	++	29.63	--	42.31	--	52.53	~~
14 ChLe%ara	7.93	~~	15.74	++	1.98	--	2.69	--	37.29	++++	22.66	++++
15 CL:WB%	24.52	~~	30.61	++	3.00	--	10.92	--	102.58	++++	46.43	++
16 LivPC	0.78	--	0.36	--	0.71	--	2.21	++	1.80	~~	2.02	++
17 CB_SG ratio	81.22	++	85.92	++	30.22	~~	11.57	--	21.11	--	22.54	~~
18 LivPF	4.40	--	3.07	--	9.15	~~	11.61	~~	7.74	~~	10.24	~~
19 sexratio	1.00	~~	0.94	~~	0.94	~~	0.96	~~	1.02	~~	1.04	++
20 Pop<5%	15.50	~~	19.38	++	16.99	~~	15.24	--	16.13	~~	15.17	--
21 Pop<6%	17.93	~~	21.24	++	17.79	~~	16.35	--	19.03	~~	13.45	--
22 <6&>65	21.64	~~	23.97	++	20.86	--	20.40	--	23.21	~~	17.16	--
23 Famdim	6.20	--	6.85	~~	6.66	~~	6.47	~~	6.36	~~	6.62	~~
24 pupnoatenr%	3.67	~~	1.92	~~	2.10	~~	3.32	~~	4.50	~~	3.38	~~
SUPPLEMENTARY VARIABLES												
1 PouPC	2.54	~~	2.65	~~	2.51	~~	3.36	~~	3.20	~~	2.93	~~
2 BeePC	12.77	~~	5.60	~~	2.98	~~	3.77	~~	14.43	~~	14.92	~~
3 PouPF	14.41	--	22.03	~~	44.87	++	22.42	~~	15.89	--	15.50	--
4 BeePF	76.56	~~	53.85	~~	27.06	--	23.82	--	70.34	~~	69.48	~~
5 not_enr%	4.62	--	6.52	~~	5.43	~~	9.67	++	7.91	~~	9.14	++
6 handic%	150.95	~~	140.14	~~	138.99	~~	162.43	~~	190.97	~~	207.73	++
7 handbir%	71.75	~~	80.44	~~	64.84	~~	71.23	~~	97.68	++	83.60	~~
8 handmine%	31.32	~~	14.60	--	21.35	~~	34.90	~~	28.87	~~	64.43	++

DESCRIPTION OF THE 11 SOCIO-ECONOMIC CLASSES (part B)										OVERALL	
CLASS	4		1		11		3		7		PROFILE
NUM of villages	152		303		206		214		380		2228
ACTIVE VARIABLES											
1 ara%	45.32	~~	22.28	--	31.77	--	27.57	--	15.46	--	43.97
2 noara%	21.33	++	27.86	++	20.18	~~	16.24	~~	27.76	++	17.75
3 past%	17.93	~~	26.67	++	26.54	++	39.36	++++	15.27	~~	17.82
4 irri%	4.23	~~	2.26	--	3.81	--	1.20	--	3.11	--	7.04
5 buar%	13.21	++	5.33	--	3.91	--	9.34	~~	10.16	~~	10.69
6 Wh%ara	32.45	~~	37.73	++	42.82	++	28.72	~~	8.40	---	30.67
7 Ba%ara	24.91	++	24.85	++	20.29	++	25.25	++	4.18	--	17.19
8 Ch%ara	2.80	--	3.63	--	10.79	++	6.52	~~	1.37	--	8.12
9 Le%ara	0.33	--	0.61	~~	2.08	++	0.56	~~	0.23	--	0.78
10 WiVE%ara	0.77	~~	0.89	~~	0.95	~~	0.42	--	1.15	~~	1.34
11 SaCr+Ve%ara	10.74	~~	9.87	~~	11.98	~~	4.51	--	16.95	~~	13.86
12 WhBar ratio	2.82	--	3.33	~~	3.74	~~	1.66	--	9.12	~~	6.90
13 WiBa%ara	57.34	++	62.57	++	63.11	++	53.86	++	12.57	---	47.85
14 ChLe%ara	3.13	--	4.24	--	12.87	++	7.07	~~	1.60	--	8.90
15 CL:WB%	6.59	--	7.02	--	21.53	~~	15.41	~~	11.30	--	20.95
16 LivPC	1.28	~~	1.21	~~	1.32	~~	8.78	++++	0.67	--	1.41
17 CB_SG ratio	22.77	~~	24.83	~~	33.09	~~	6.02	--	35.43	~~	34.26
18 LivPF	10.54	~~	11.10	~~	9.33	~~	43.25	++++	6.78	--	9.71
19 sexratio	0.96	~~	0.95	~~	0.97	~~	1.00	~~	0.98	~~	0.98
20 Pop<5%	16.41	~~	16.46	~~	16.90	~~	15.17	--	17.15	~~	16.58
21 Pop<6%	32.78	++++	15.44	--	22.11	++	18.54	~~	18.16	~~	18.76
22 <6&>65	39.42	++++	18.66	--	25.84	++	22.54	~~	21.63	~~	22.46
23 Famdim	5.84	--	7.28	++	6.11	--	6.31	--	6.95	~~	6.64
24 pupnoatenr%	5.48	++	2.06	~~	3.16	~~	2.82	~~	2.59	~~	2.95
SUPPLEMENTARY VARIABLES											
1 PouPC	2.79	~~	2.17	~~	2.66	~~	6.22	++	1.55	--	2.60
2 BeePC	9.51	~~	15.92	~~	10.41	~~	12.45	~~	10.93	~~	10.42
3 PouPF	19.13	~~	16.48	~~	21.45	~~	27.57	~~	32.58	++	24.10
4 BeePF	98.00	~~	99.70	~~	72.08	~~	67.76	~~	91.92	~~	71.09
5 not_enr%	4.93	~~	5.91	~~	6.87	~~	6.68	~~	5.03	~~	6.43
6 handic%	179.13	~~	206.34	++	164.14	~~	187.52	~~	133.66	~~	166.93
7 handbir%	72.27	~~	103.88	++	75.47	~~	78.70	~~	51.52	--	76.16
8 handmine%	45.32	~~	28.65	~~	24.75	~~	32.22	~~	32.41	~~	32.18

TOR's duty 2

To evaluate the current rural/urban exchange profiles and the way these are affected by the current food ration system

Due to a lack of significant analysis on rural/urban exchanges, few specific questions have been included in the SHS questionnaires.

Since now it is evident that the traditional patterns of the rural/urban exchange have been heavily modified by the current ration system.

It seems that:

- Farmers are abandoning their traditional cropping system that was mostly motivated by a self-sufficiency food security strategy.
- The fact that the cereal component of the monthly ration lasts, at least apparently, for approximately three weeks and that the cereal prices on the free market are substantially steady provokes an abnormal situation in the countryside.
- In the remote rural areas the farmers are limiting their agricultural production strictly to satisfy their household needs, complementing the quantities provided by the ration.
- Only in the most accessible areas (within an easier communication network) and not always here too, farmers are partially changing their cropping strategies. This is the case of the introduction of the so called "economic crops". Nevertheless this kind of reconversion is heavily limited by a low increase of the urban/internal demand, for not speaking about the international one.

These preliminary assumptions will be verified, revised –as far as possible – through the answers provided at the occasion of the SHS.

TOR's duty 3

To coordinate the study activities with the surveys and studies that are carried on with [other UN agencies (WFP, FAO, UNOCHI)]

The Consultant, while in Italy and before the period of the present mission, informally contacted in Rome many colleagues both in FAO and in WFP HQs, between them:

- Mrs Anne Callanan, ODT, WFP
- Mrs Florence Egal, ESNP, FAO
- Mr Rodrigue Vinet, TCOR, FAO
- Mr Stephan Baas, RDD, FAO
- Mr J. van Amerongen, AGP Consultant, FAO

The exchange of opinions was focused mainly on the following point:

- √ The outcomes of the last **"assessment of the food and nutrition situation"** mission (FAO, WFP, WHO assisted by UNOCHI, May 2000)
- √ The outcomes of the FAO **"Multidisciplinary Reconnaissance Mission Fielded in Iraq in November/December 2001"**
- √ The main outcomes of the WFP **"Adequacy of SCR 969 Ration Survey"** [provisional title, document not yet released]

The following points, deserving attention, emerged. They are summarized here below:

1. There is a real interest inside the concerned technical Division both of WFP and FAO to carry out joint activities with Habitat in order to evaluate the long term negative impacts/effects of the **SCR 969 on rural life**. What Habitat is investigating through the SHS is viewed as a very important attempt to a better understanding of this basic topic. Probably the expectations are too high: this is the risk! But this is also the challenging aspect of our work!
2. As far as Habitat is expected to deal with the problem of rural resettlement, it seems advisable to find the way of promoting a workshop on this crucial theme (on September 2001?) But who, as first, will take the initiative to call for it?
3. Any UN Agency is now expressing the willingness of **“reorienting”** or **“rethinking”** the previous programmes, and to stop with the practices of accepting the priorities indicated by the LAs’s “shopping list”. It is lamented that “no methodology for .. targeting and participatory needs assessment has been established yet”¹⁷
4. As a consequence more emphasis is given to the need of building comprehensive databases at local level¹⁸. In this common perspective Habitat could play an important role.

TOR’s duty 4

To design a rural area monitoring system that will allow updating on the basis of annual and seasonal time scheduling the accounting system on resources/pressure balance

The design of a rural area monitoring system seems to be premature due to the still rather fuzzy panorama of proposals both in Habitat and also in other UN Agencies.

Nevertheless it is expected that at the beginning of the Consultant’s next mission (September 2001):

- ✓ when the task of rebuilding a **georeferenced, rather comprehensive and homogenous rural database (3V_S Database) complemented by NDVI** indicators will be fully achieved, and
- ✓ when the expected **Database and GIS Consultant** will join the Planning Unit, and
- ✓ when the **FAO Socio-economic Unit** will be established and consequently it will be possible to define precise modalities of collaboration/integration,

the informational environment will be better defined. At that stage will be probably possible to **“design”** a first draft of the expected **“rural area monitoring system”**.

TOR’s duty 5

To evaluate the outcomes of the study with the aims and objectives of Habitat’s mission in NI according to international agreements within the framework of the “Oil for Food” program.

It is evident that this duty will be accomplished only when the outcomes of the study will be drafted.

¹⁷ see for instance “FAO, Towards a strategic framework for sustainable agricultural rehabilitation programme in the three Northern Governorates of Iraq”, vol.1, page 107

¹⁸ see for instance the TOR of the new **“Socio-economic Unit”**, in “FAO, Towards a strategic framework for ..”, vol.1, page 119. For a better information **annex 4** contains a short description of the expected Unit and the TOsR of the staff expected to assist in the implementation phase.

ANNEXES

Annex 1	Ongoing matching databases contents	26
Annex 2	List of Governorates, Districts and Sub-districts according to different dates and databases	31
Annex 3	Instructions provided for matching FAO 1999, UNICEF 1997 and IKRP 2000 databases at village level	36
Annex 4	Excerpt from TORs included in FAO, <i>“Towards a strategic framework for sustainable agricultural rehabilitation programme in the three Northern Governorates of Iraq”</i>, Rome, 2001	38

Annex 1

ONGOING MATCHING DATABASE CONTENTS

DESCRIPTION OF RECORDS

FAO - Village Survey 1999 number of villages: 4972	UNICEF 97 - Village database number of villages: 4760
1 Counter 2 Gov-Code 3 District-Code 4 Location 5 Sub-Code 6 Village 7 Village Location 8 Farmer 9 Mahjur 10 No of V house 11 Total V 12 No farmers 13 Total area 14 Arable area 15 Non-arable area 16 Orchard area 17 Forestry area 18 Bulding Area 19 Natural pasture area 20 Guaranteed rainfall 21 Semi-Guaranteed rainfall 22 Non-Guaranteed rainfall 23 Irrigation area 24 Wheat 25 Barley 26 Chickpea 27 Lentil 28 Winter Vegetables 29 Summer C & V 30 Bur area 31 Cow 32 Buffalo 33 Sheep 34 Goat 35 Horses and mules 36 Donkey 37 Chicken 38 Duck 39 Goose 40 Turkey 41 Beehives 42 H-Jonder 43 H-Laverda 44 H-Fargason 45 H-Others 46 H-Kharmanko 47 T-Antar 48 T-Fargason	1 No. of entry 2 Governorate 3 District 4 Nahia 5 Village name 6 Sector No. 7 Main source of income 8 Main problem related to source of income 9 Electricity y/n 10 Population No. 11 Male % 12 Female % 13 Population under 5 years % 14 Prior to des.Period 15 Currently 16 Permanently % 17 Temporarily % 18 Deserted % 19 Reasons for temporarily 20 Reasons for deserted 21 Mosque y/n 22 Church y/n 23 Irrigation channel y/n 24 Comments 25 Water project y/n 26 Gravity (no.) 27 Pump (no.) 28 Deep well (no.) 29 Other (type) 30 Distance from village km. 31 No. of water points 32 Comments 33 Public latrine y/n 34 Sewage disposal 35 House latrines No. 36 Single pit 37 Double pit 38 Open field 39 Comments 40 Is there a primary school building y/n 41 Classes No. 42 Classrooms No. 43 Full-time teacher No. 44 Part-time teacher No. 45 Pupils enrolled No. 46 Age range 47 Pupils not enrolled No. 48 Nearest school if none present

49 T-Fiat
 50 T-Jonder
 51 T-Valvo
 52 T-Other
 53 P-Less 6
 54 P-(6-12)
 55 P-(12-18)
 56 P-(18-24)
 57 Irtwazia
 58 Poultry farms
 59 Cow breeding
 60 Sheep breeding
 61 Goat breeding
 62 Beekeeping
 63 Fish breeding
 64 Orchard
 65 Nursery
 66 Man-made forest
 67 Complementary irrigation
 68 Feed stuff factories
 69 Mill
 70 Water Source1
 71 Water Source2
 72 Water Source3
 73 Water Source4
 74 Water Source5
 75 Electricity
 76 Primary school
 77 Intermediate school
 78 Health clinic
 79 Road

filename: All.xls

49 How far ? Km.
 50 Comments
 51 Health centre y/n
 52 Doctors No.
 53 Medical assistant No.
 54 Other
 55 Maternity facil. y/n
 56 Nearest H.C if none present
 57 How far ? Km.
 58 Comments
 59 Distance between village & Nahia km.
 60 Dist . between village and main road km.
 61 Track %
 62 Sub-base %
 63 Paved %
 64 Other
 65 Culvert
 66 Gravel lining
 67 Other
 68 Needs an access road ? y/n
 69 Comments
 70 Collated comments

filename: Surveyyn.xls

UNICEF - Village population

used for current surveys
 number of villages: 2869

1 Village name
 2 Village code
 3 Variable (pop)
 4 Value
 5 Sub-district
 6 District

filename: rural_population_UNICEF.xls

UNOPS - NIMA - Lade layer

all localities: 5542

1 ID
 2 X, longitude (100')
 3 Y, latitude (100')
 4 NEW_ID
 5 LOCALITY NAME

filename: ladenname.xls

FAO - MAPINFO Database -

number of localities: 4060

1 SETTLEMENT name
 2 SUBDISTRICT
 3 DISTRICT
 4 GOVERNORATE
 5 X, longitude (100')
 6 Y, latitude (100')

filename: AllvillagesClean2_lat_lon.xls

IKRP 2000 - Village Multi_sectoral database

number of villages: 4860

1	Serial Number	104	Number of dwellings which have the exclusive toilet
2	Number of the Team	105	The percentage of toilet with two wells
3	The Districts and Subdistricts Name	106	The percentage of Toilet with Open system
4	The Name of the Villages	107	Name
5	The Villages Name in English	108	1-Notes
6	The Number of the site	109	Is there a primary school in the village?
7	The substitute name of the village	110	If no, Was there aschool in the village in the past time?
8	The date of the interview	111	The condition of the primary school
9	The time of starting the interview	112	Number of classes primary school
10	The time of finishing the interview	113	Number of stages primary school
11	Notes	114	Number of enrolled teachers
12	Was the village destroyed in the past?	115	Number of absent teachers
13	How many times did the village destroy?	116	Number of enrolled pupils
14	When did the reconstruction of the village start?	117	Number of pupils who left the school
15	Is anew village build in the same site?	118	Why do they leave the school?
16	How far is it between the new village and the old village?	119	Number of Male in first stage - 6 years
17	The Notes	120	Number of Male in first stage - 7 years
18	The total number of the population	121	Number of Male in first stage - 8 years
19	Number of Male	122	Number of Male in first stage - more than 9 years
20	Number of Female	123	Number of Female in first stage - 6 years
21	Number of children less than 6 years old	124	Number of Female in first stage - 7 years
22	Number of advanced in years over 65 years	125	Number of Female in first stage - 8 years
23	Number of advanced in years(65) and they are responsible for the	126	Number of Female in first stage - more than 9 years
24	Number of families	127	Number of unrecorded pupils in first stage
25	Number of houses before the last destroy	128	The reason for not recording them
26	Number of present houses	129	Is there an intermediate school in the village?
27	Number of permanent residence houses	130	Was there an intermediate school in the village?
28	Number of resedence houses during the summer	131	Number of classes in the intermediate school
29	Number of resedence houses during the winter	132	Number of stages in the intermediate school
30	Number of deserted houses	133	2- Number of enrolled teachers
31	Number of houses which can be settled	134	Number of lecturing teachers
32	Number of houses which can not be settled	135	Number of enrolled pupils in the intermediate school
33	Indicate the reason If the house is residence during the summer	136	Number of pupils who left in the intermediate school
34	Indicate the reason If it is not residence during the summer	137	Why do the pupils leave the intermediate school?
35	What will be ahelpful for returning or	138	6- Notes
36	What are the reasons for leaving their village and not returning	139	Is there a health center in the village?

37	1-Indicate the reason If it is not residence	140	If no, was there in the past time?
38	2-Indicate the reason If it is not residence	141	The name of the health center
39	What will be ahelpful for returning	142	The condition of the health center
40	What are the reasons for leaving their village and not returning	143	Number of Doctors
41	Is there a mosque in the village?	144	Number of medical staff
42	Who built it?	145	Other
43	Is there a church in the village?	146	What are the medical services which exist?
44	Who built the church	147	The condition of the building
45	1- Notes	148	Are there mid wives in the village?
46	Kurdish(Sorani Dialect)	149	Number of mid wives
47	Kurdish(Badini Dialect)	150	If there are not mid wives in the village, where is the nearest
48	Kurdish(Hawrami Dialect)	151	The distance of the nearest health center when it is not
49	Kurdish(Other Dialects)	152	The main health problems in the village-1
50	Syriani	153	The main health problems in the village-2
51	Turkumani	154	The main health problems in the village-3
52	Name	155	Are there Handicaps in the village?
53	Arabic	156	Number of Handicaps in the village
54	Indicate others	157	Number of Handicaps by the time of birth
55	Muslem(Suni)	158	Number of Handicaps by the Mines
56	Muslem(Shea)	159	Number of Handicaps by other reasons
57	Christian(Arthadox)	160	7- Notes
58	Christian(Catholic)	161	Where is the nearest Urban Settlement?
59	Yazedi	162	The distance between the village and the Urban Center(km)
60	Kakayi	163	The distance between the village and the Urban Center(Minutes)
61	Others(specify)	164	Name
62	3- Notes	165	The name of the nearest main Road
63	The kind of water drinking exist in the village	166	The distance between the village and the nearest main Road
64	Is there water project in the village?	167	The Length of unconstructed
65	1-The kind of water drinking exist in the village	168	The Length of constructed
66	2-The kind of water drinking exist in the village	169	The Length of paved
67	Is there water project in the village	170	The Length of other sections of the road
68	If yes, Which kind of project is it?-1	171	Number of arch needs
69	If yes, Which kind of project is it?-2	172	The length of constructed way which needs improving(km)
70	If yes, Which kind of project is it?-3	173	The length of paving needs(km)
71	Number of water projects which work	174	Number and the length of building bridge
72	Number of water projects which do not work	175	Other needs for improving the Roads
73	Howfar is the source of water in(km)-1	176	Do the village need to build new roads
74	Howfar is the source of water in(km)-2	177	The length of the roads (km)
75	Number of public taps and hand pumps	178	Notes on the roads
76	How is the condition of the water project?	179	Is the village supplied with the main net work of water?
77	Did you use water tanks last year?	180	Are there any Generators inside the village?
78	Number of liters used daily	181	Is there power plant(Hydraulic) in the

79	The quantity of water used for animals Liter/ Day	182	village? How many times does it supply the electricity?
80	The quantity of water used for Human beings Liter/ Day	183	Kind of power plant(Hydraulic)
81	The quantity of water used for Agriculture Liter/ Day	184	The height of the source of water from the poor plant(m)
82	The quantity of water used for other purposes Liter/ Day	185	The distance of the power plant(Hydraulic) from the village(km)
83	What is the solution for decreasing water problem	186	The quantity of water in Liters
84	4- Notes	187	9- Notes
85	Are there irrigation channels in the village?	188	Is there mine field in the village?
86	Number of working irrigation channels	189	Number of mine fields in the village?
87	Number of irrigation channels which are not working but can be	190	Number of persons which died by the Mines
88	Number of irrigation channels which are not working but cannot	191	Number of mine fields which they have not Warning Marks
89	Are there other channels which their water is more than the vill	192	Number of mine fields which they have Warning Marks
90	Are there any increasing water sources which can be used in	193	Are the people of the village enter the Mine fields?
91	If yes indicate the number	194	Are they enter to the fields intentionally?
92	Are the irrigation channels effected by droughty?	195	Why they enter to the fields intentionally?-1
93	If yes how much is the water source effected in decreasing the	196	Why they enter to the fields intentionally?-2
94	5- Notes	197	Why they enter to the fields intentionally?-3
95	Is there a toilet in the village?	198	Are the people of the village raised the Warning Marks?
96	Number of Toilets in work	199	Are the Mine fields eliminated previously?
97	Number of Toilets are not in work	200	1- Are the people of the village edificated from the Mines?
98	Number of benefit toilets	201	1- The means which got from the Mines
99	Number of non benefit toilets	202	Are the people of the village edificated from the Mines?
100	The percentage of Toilet with one well	203	The means which got from the Mines
101	The percentage of Toilet with two well toilet	204	The main factors of Mine fields on the village population
102	The percentage of open galley toilet	205	10- Notes
103	Number of dwellings which have the exclusive toilets		

filename: VMS2_B_Translated.mbd

translation of variables names still under revision

filename: List_of_variables_6DB.xls

Annex 2

ADMINISTRATIVE AREAS according to different databases

original names

Original FAO 99 Village Database

DOHUK		
Dohuk	Akra	Akra Center
Dohuk	Akra	Bardarash
Dohuk	Akra	Bjel
Dohuk	Akra	Dinarta
Dohuk	Akra	Grdasin
Dohuk	Amadia	Amadia
Dohuk	Amadia	Deralok
Dohuk	Amadia	Kani Mase
Dohuk	Amadia	Sarsang
Dohuk	Doh. Center	Doh. Center
Dohuk	Doh. Center	Doski
Dohuk	Doh. Center	Zawita
Dohuk	Shekhan	Atrush
Dohuk	Shekhan	Badri
Dohuk	Shekhan	Qasrok
Dohuk	Sumel	Batel
Dohuk	Sumel	Sumel
Dohuk	Zakho	Batufa
Dohuk	Zakho	Darkar
Dohuk	Zakho	Kani Mase
Dohuk	Zakho	Rzgari
ERBIL		
Erbil	Choman	Choman
Erbil	Choman	Galala
Erbil	Choman	Haji Omaran
Erbil	Erbil Center	Ainkawa
Erbil	Erbil Center	Khabat
Erbil	Erbil Center	Qushtapa
Erbil	Mergasor	Barzan
Erbil	Mergasor	Mergasor
Erbil	Mergasor	Sheruan Mazn
Erbil	Quaisinjak	Quaisinjak
Erbil	Quaisinjak	Shorsh
Erbil	Quaisinjak	Taqtaq
Erbil	Shaqlawa	Harir
Erbil	Shaqlawa	Khoshnaw
Erbil	Shaqlawa	Salahadin
Erbil	Soran	Diana
Erbil	Soran	Khalifan
Erbil	Soran	Rawanduz
Erbil	Soran	Sidakan
SULEIMANYHA		
Suleimanyha	Chmchmal	Aghjalar
Suleimanyha	Chmchmal	Chmchmal
Suleimanyha	Chmchmal	Qadr Karam
Suleimanyha	Chmchmal	Sangaw
Suleimanyha	Chmchmal	Shwan-Qrnaw
Suleimanyha	Darbandikhan	Darbandikhan
Suleimanyha	Darbandikhan	Zrain
Suleimanyha	Dokan	Bngrd
Suleimanyha	Dokan	Khalakan
Suleimanyha	Dokan	Surdash
Suleimanyha	Halabja	Biara

Suleimanyha	Halabja	Khormal
Suleimanyha	Halabja	Said Sadq
Suleimanyha	Halabja	Siruan
Suleimanyha	Kalar	Bebaz
Suleimanyha	Kalar	Kalar
Suleimanyha	Kalar	Tilako (Gulajo)
Suleimanyha	Kfri	Nojul
Suleimanyha	Kfri	Sarqala
Suleimanyha	Khanaqin	Maidan
Suleimanyha	Khanaqin	Qoratow
Suleimanyha	Penjween	Garmak
Suleimanyha	Penjween	Penjween
Suleimanyha	Pshdar	Hero
Suleimanyha	Pshdar	Sangasar
Suleimanyha	Rania	Chuarqurna
Suleimanyha	Sharbazher	Barznja
Suleimanyha	Sharbazher	Mauat
Suleimanyha	Sharbazher	Sharbazher
Suleimanyha	Sharbazher	Siwail
Suleimanyha	Sul Center	Bazian
Suleimanyha	Sul Center	Qaradagh
Suleimanyha	Sul Center	Sarchnar
Suleimanyha	Sul Center	Tanjro

filename: FAO_99_admin_areas.xls

ADMINISTRATIVE AREAS according to different databases

original names

Original UNICE97 Village Database

DOHUK		
Dohuk	Akrea	Akrea
Dohuk	Akrea	Bardarash
Dohuk	Akrea	Gardaseen
Dohuk	Akrea	Nahla
Dohuk	Akrea	Sorchy
Dohuk	Amaedy	Amaedy
Dohuk	Amaedy	Barwary
Dohuk	Amaedy	Nerwa Rekan
Dohuk	Amaedy	Sarsenk
Dohuk	Dohuk	Dohuk
Dohuk	Dohuk	Dosky
Dohuk	Dohuk	Zawita
Dohuk	Shekhan	Atrosh
Dohuk	Shekhan	Qasrok
Dohuk	Sumail	Sulaivany
Dohuk	Sumail	Surmail-Faida
Dohuk	Zahko	Gully
Dohuk	Zahko	Rezgary
Dohuk	Zahko	Sendy
ERBIL		
Erbil	Choman	Galala
Erbil	Choman	HajiOmaran
Erbil	Erbil	Ainkawa
Erbil	Erbil	Khabat
Erbil	Erbil	Qushtapa
Erbil	Koisenjaq	Koisenjaq
Erbil	Koisenjaq	Shorish
Erbil	Koisenjaq	Taq-Taq
Erbil	Shaqlawa	Hareer
Erbil	Shaqlawa	Hiran
Erbil	Shaqlawa	Salahaddin
Erbil	Soran	Diana
Erbil	Soran	Khalifan
Erbil	Soran	Rawanduz
Erbil	Soran	Sidakan
Erbil	Zebar	Barzan
Erbil	Zebar	Mergasur
Erbil	Zebar	Sherwanmazin
SULEIMANIYAH		
SULEIMANIYAH	CHWARTA	CHWARTA
SULEIMANIYAH	CHWARTA	MAWAT
SULEIMANIYAH	CHWARTA	SEEWAIL
SULEIMANIYAH	CHWARTA	SRUCHIK
SULEIMANIYAH	DOKAN	BINGIRD
SULEIMANIYAH	DOKAN	CHINARAN
SULEIMANIYAH	DOKAN	SURDASH
SULEIMANIYAH	HALABJA	BIARA
SULEIMANIYAH	HALABJA	KHURMAL
SULEIMANIYAH	HALABJA	SAIDSADIQ
SULEIMANIYAH	HALABJA	SEERWAN
SULEIMANIYAH	PENJWEEN	GARMIK
SULEIMANIYAH	PENJWEEN	PENJWEEN
SULEIMANIYAH	QALADIZA	HERO
SULEIMANIYAH	QALADIZA	PISHDAR CENTRE
SULEIMANIYAH	RANYA	BETWATA

SULEIMANIYAH	RANYA	CHWARQURNA
SULEIMANIYAH	SULAIMANIYAH	ARBAT
SULEIMANIYAH	SULAIMANIYAH	BAZIAN
SULEIMANIYAH	SULAIMANIYAH	QARADAGH
SULEIMANIYAH	SULAIMANIYAH	SARCHINAR
DARBANDIKHAN		
DARBANDIKHAN	KIFRI	NAWJUL
DARBANDIKHAN	KIFRI	SARQALA
DARBANDIKHAN	KALAR	KALAR
DARBANDIKHAN	KALAR	MAIDAN
DARBANDIKHAN	KALAR	PEBAZ
DARBANDIKHAN	KALAR	QURATO
DARBANDIKHAN	KALAR	TILAKO
DARBANDIKHAN	DARBANDIKHAN	DARBANDIKHAN
DARBANDIKHAN	DARBANDIKHAN	ZARAEN
DARBANDIKHAN	CHAMCHAMAL	AGHALAR
DARBANDIKHAN	CHAMCHAMAL	CHAMCHAMAL
DARBANDIKHAN	CHAMCHAMAL	QADIR KARAM
DARBANDIKHAN	CHAMCHAMAL	SANGAW
DARBANDIKHAN	CHAMCHAMAL	SHOWAN

filename: UNICEF97_admin_areas.xls

ADMINISTRATIVE AREAS according to different databases

original names

Original IKRP 2000 Village Database

	blank = not specified in the original database	
DOHUK		
Akre Center	Duhok	Dohuk
Amedi Center	Duhok	Dohuk
Atrosh		Dohuk
Barda Rash		Dohuk
Batufa	Duhok	Dohuk
Bijil		Dohuk
Dera Lok		Dohuk
Dinarta		Dohuk
Dosky	Duhok	Dohuk
Duhok	Duhok	Dohuk
Fayde		Dohuk
Girde Sin		Dohuk
Gwer		Dohuk
Kalak	Duhok	Dohuk
Kani Masi	Duhok	Dohuk
Qasrok	Duhok	Dohuk
Rezgary		Dohuk
Sarsang		Dohuk
Sindi	Duhok	Dohuk
Slevani	Duhok	Dohuk
Summail Center	Duhok	Dohuk
Zawita		Dohuk
ERBIL		
Ainkawa	Erbil	Erbil
Ashti	Erbil	Erbil
Barzan	Erbil	Erbil
Benslawá	Erbil	Erbil
Diana		Erbil
Galala	Erbil	Erbil
Haji Omeran		Erbil
Hareer	Erbil	Erbil
Hiran		Erbil
Khabat	Erbil	Erbil
Khalefan		Erbil
Khoshnaw	Erbil	Erbil
Koysinjq	Erbil	Erbil
Mergasur Center	Erbil	Erbil
Qushtapa		Erbil
Rowandoz		Erbil
Salahaddin	Erbil	Erbil
Shorsh		Erbil
Sidekan		Erbil
Taq Taq	Erbil	Erbil
SULAIMANYA		
Balisan		Sulaimanya
Bayara	Sulaimanya	Sulaimanya
Bazian	Sulaimanya	Sulaimanya

Betwata	Sulaimanya	Sulaimanya
Bingerd		Sulaimanya
Bingird	Sulaimanya	Sulaimanya
Chinaran	Sulaimanya	Sulaimanya
Chwarqurna	Sulaimanya	Sulaimanya
Chwarta	Sulaimanya	Sulaimanya
Hero	Sulaimanya	Sulaimanya
Khormal		Sulaimanya
Khormal	Sulaimanya	Sulaimanya
Mawat	Sulaimanya	Sulaimanya
Nalparez	Sulaimanya	Sulaimanya
Peshawa	Sulaimanya	Sulaimanya
Qalladiza	Sulaimanya	Sulaimanya
Qaredagh		Sulaimanya
Saidsadiq		Sulaimanya
Sangasar	Sulaimanya	Sulaimanya
Sarchinar	Sulaimanya	Sulaimanya
Sarchnar		Sulaimanya
Sherwan Mezin		Sulaimanya
Sirwan	Sulaimanya	Sulaimanya
Surdash	Sulaimanya	Sulaimanya
KIRKUK		
Aghjalar	Kirkuk	Darbandikhan
Chamchamal	Kirkuk	Darbandikhan
Darbandikhan	Kirkuk	Darbandikhan
Kalar	Kirkuk	Darbandikhan
Meidan		Darbandikhan
Nujol		Darbandikhan
Pebaz	Kirkuk	Darbandikhan
Qadir Kerem		Darbandikhan
Qure Tu		Darbandikhan
Sangaw	Kirkuk	Darbandikhan
Sar Qala		Darbandikhan
Tilako		Darbandikhan
NOT SPECIFIED		
Hajiawa		
Kermek		
Khan		
Kirmik		
Semud		
Shuan		
Siwael		
Siweil		
Srojek		
Tanjarow		

filename: IKRP_2000_admin_areas.xls

Annex 3

INSTRUCTION PROVIDED FOR MATCHING FAO 1999, UNICEF 1997 AND IKRP 2000 DATABASES at village level

Preliminary note: **the relevant files (FAO99, UNICEF97 AND IKRP2000) are already provided at Governorate level**

1.

The villages FAO99 are assumed as the primary-key of the matching

2.

Match the four FAO99 Governorates database with the corresponding UNICEF97 ones, creating three types of files (for each Governorate) containing:

- villages matching
- villages not matching ["bin" files]
- villages with double or more matching names (i.e. one name in FAO99 and two or more in UNICEF97, or vice versa)

(the total number of files will be 4 Gov x 3 type of files = 12 files)

3.

Match the four FAO99+UNICEF97 files (with matching villages) with the IKRP2000 files creating :

- four new village matching files.
- villages not matching ["bin" files]
- villages with double or more matching names

4.

Create an overall not matching village file (the "overall bin" file)

5.

As the matching has been applied at Governorate level, a "second round" matching should be carried out "fishing" from the "overall bin" (not matching villages) file.

The results should be appended to the four Governorate "matching villager" files already done.

6.

The 4 Governorate double matching files will be provided without any change to the Consultant, who will implement adequate procedures to reaggregate the data.

It is expected that the job will be accomplished in one month.

Erbil, 06.05.01

Annex 4

Excerpt from TORs included in

FAO, "Towards a strategic framework for sustainable agricultural rehabilitation programme in the three Northern Governorates of Iraq", Rome, 2001

Socio-economic Unit

The unit will work under the overall supervision of the programme Coordinator for the North and in close partnership with the LAs. The unit will be supported and backstopped by FAO HQs technical divisions, in particular by AGS and SDA. The unit will basically focus on socio-economic and socio-cultural issues as well as on community level institution and capacity building. The unit will have specific responsibility for **(a) assessing and analysing farm economics of small farmer households and vulnerable groups and feed this information into all sub-sectoral activities**, (b) co-ordinating with other units, the specific programme thrust for integrated, sustainable rural rehabilitation, **(c) designing and advising on participatory approaches and processes within the programme and in selected pilot villages and resettlement areas**, (d) developing and directing the programme element for **vulnerable people and disadvantaged areas**, (e) guiding activities in the areas of rural financial and marketing services, **(f) integrating gender issues into the programme, as appropriate, and (g) land tenure issues**.

It is recommended that the unit will be staffed with a Production Economist and a Rural Sociologist as soon as possible, nominating the more experienced expert as Team Leader. At least one national expert/counterpart per discipline and governorate should be recruited immediately thereafter. Furthermore, a consultant is proposed to join the team asap to assist in methodology development for improved poverty targeting and needs assessments .

The unit, once operational, will fine-tune and further develop its own TOR on a demand driven basis, responding to the emerging needs of the programme and its counterparts in the field.

During the first months the unit will concentrate on the following urgent tasks:

- *Designing a work plan and establishing needs responsive working linkages with other programme units, and the UNOHCI socio-economic unit to ensure highest possible complementarity, interaction and to avoid duplication of activities;*
- *Review existing data on socio-economic, production economic and socio cultural issues available within the programme and from partner agencies, and design thereafter data collection methodology among target groups, and data systems for analysis and monitoring purposes;*
- *Formulate Terms of Reference for international and national consultants for the unit, including national consultants to implement field data collection;*
- *In close collaboration with LAs, select pilot villages and develop a pilot model for information collection and implementation of the integrated rural rehabilitation sub-programme .*
- *Building staff capacities in participatory approaches and techniques and mainstreaming their application within the programme; This will include liaison with the extension unit to ensure smooth methodological and practical integration of the participatory extension system and the community based integrated rehabilitation activities.*

Rural Sociologist in the Socio economic Unit (TOR)

Under the technical guidance of SDA and the overall operational supervision of TCOR, the FAOR Office in Baghdad, and the FAO programme coordinator for Northern Iraq, and in close collaboration with the Production Economist and other staff of the socio economic unit, the expert will guide the implementation of the sub-programme thrust on integrated rural rehabilitation and will be responsible for assessing and developing operational modalities for launching community based approaches for rural rehabilitation. More specifically he/she will pursue/launch the following tasks during the first 6 months of assignment :

Based on a comprehensive review of programme documentation and field activities and interviews with different programme stakeholders

- *Assist the overall programme with technical advice on socio-economic and sociocultural issues as required and requested by other sub-units/teams,*
- *Develop in close collaboration with the Production Economist and other staff of the socio economic unit, the operational strategy for implementing the sub-programme thrust on integrated rural rehabilitation*

- **Assist in the design of case specific intervention modalities for programme support to the following groups of vulnerable peoples (a) IDPs with access to land; (b) female headed Households/Widows (c) people living in disadvantaged dry and mountainous areas (d) support farmer IDPs and refugees without current access to land;**
- Review participatory approaches currently applied within the various sub-sectors of the programme and
 - (a) identify training needs in participatory approaches among project staff and LA counterparts ,
 - (b) strengthen the knowledge base on participatory approaches within the programme, in a way appropriate to the Northern Iraq situation and programme requirements and
 - (c) elaborate in consultation with LAs and programme staff the basic principles which should underscore a participatory approach/methodology in the overall programme and
 - (d) organize thereafter (using specialized PA training consultant)a process of capacity building among project staff and LA counterparts in participatory approaches and PRA techniques (in collaboration with an short term consultant extension section);
- *Assess scope, potentials and constraints for farmers groups and/or other possible self-help approaches, and develop together with other programme units a strategy for strengthening existing/creation of new rural organizations such as marketing and/or savings-credit village unions and/or water users and/or women groups at village level, and/or animal health workers and agro-processing and marketing interest groups at sub-district level; Propose the roles such organizations could play in a community based rural rehabilitation process; include an assessment of horizontal and vertical co-ordination mechanisms between different organizations required to sustain rural rehabilitation;*
-
- *Assist thereafter in establishing an organizational framework at community level which facilitates complementary interaction between local authorities and village communities in their joint efforts of rehabilitating the rural villages in Northern Iraq;*
-
- Guide the process of community mobilization in selected resettled and traditional villages and among groups of vulnerable people targeted by the programme and assist community organizations/groups in developing their own action plans which offer the basis for cross-sectoral sustainable community rehabilitation.
- *Take up duties as they will emerge*
-
- *Assist with advice in the above fields for fine tuning the medium term workplan of the socio economic unit*

Duration: either as team leader with a fixed term contract or as consultant for 11 months renewable;

Qualifications : Sociologist/Socio-economist/Social Anthropologist with extensive practical experience in rural settlement and rehabilitation programmes; strong conceptual and methodology development skills and sound experience in community based development and participatory approaches/methods; experienced in team working.

Rural Poverty Alleviation - Poverty Targeting Consultant (TOR)

Under the technical guidance of SDA and the overall operational supervision of TCOR, the FAOR Office in Baghdad, and the FAO programme coordinator for Northern Iraq, and in close collaboration within the socio-economic unit the consultant will be temporary member of the :

- *Analyze the nature and occurrence of poverty among and within the rural areas of Northern Iraq, including the **impacts of subsidies on small farmers and different categories of vulnerable groups**, elaborate an improved approach and methodologies for poverty targeting within the agricultural sector/the programme; develop a set of clear criteria which determine/limit the participation in specific poverty support by the programme.*
- *Assist the programme in developing an improved needs assessment methodology, which suits the demands of the different programme sub-sectors.*
- ***Establish, where appropriate, working relations with other UN agencies (particularly WFP, UNOHCI and HABITAT) and NGO's for coordinated activities targeted at vulnerable groups.***

Qualifications : Sociologist/Socio-economist with broad expertise in poverty alleviation and extensive practical experience in rural settlement and rehabilitation programmes; strong conceptual and methodology development skills; knowledge of participatory approaches/ methods.

