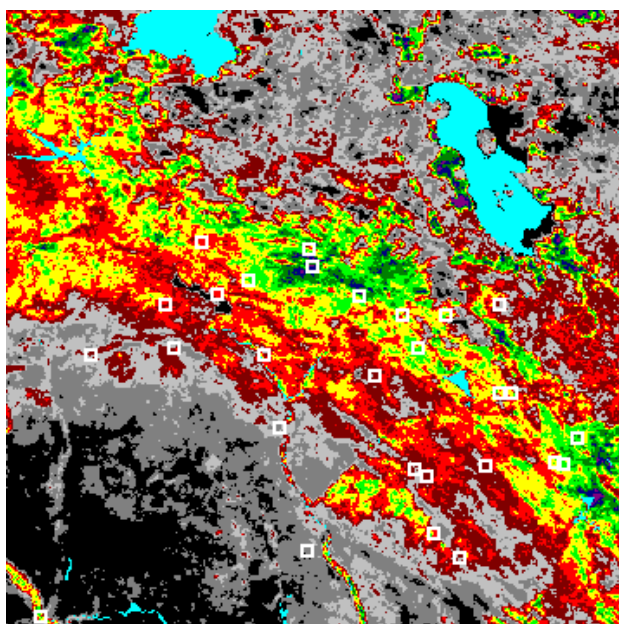**UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS (Habitat)**
Settlements Rehabilitation Programme – Northern Iraq

Paolo Santacroce
Rural Area Development Senior Consultant
Duty Station: Erbil, Iraq

Back to Office Report

First mission (February 12th – March 12th, 2001)

Itinerary:

Venice\Wien\Amman	12.02.2001
Amman\Baghdad	13.02.2001
Baghdad\Erbil	19.02.2001
Erbil\Dohuk	25.02.2001
Dohuk\Erbil	26.02.2001
Erbil\Sulimanyia	03.03.2001
Sulimanyia\Erbil	04.03.2001
Erbil\Baghdad	10.03.2001
Baghdad\Amman	11.03.2001
Amman\Wien\Venice	12.03.2001

To: CTA and Deputy CTA, in Erbil
          Habitat Head Office (Nairobi)
          HHS Consultant, duty station

Erbil/Venice 13.03.2001

The remote sensing image on the cover synthetically represents the average yearly production of biomass in North Iraq and surrounding territories.

Small white squares indicate the main cities.

The image is obtained by a time series set of NDVI (Normalised Difference Vegetation Index)* 10-day composite NOAA-AVHRR (1Km), provided by USGS, and processed by the Consultant.

An extensive use of the above images will be included in the Consultant final report.

* The Normalised Difference Vegetation Index 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:
$$NDVI = (NIR - VIS) / (NIR + VIS)$$
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.

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Overall Objective of the Consultancy (60 working days)

"To determine the socioeconomic structure, the vulnerability and the development potential of Northern Iraqi rural areas"

"In particular the following three objectives have to be reached:
- ✓ *To produce a comprehensive study on all the significant factors affecting rural area life stiles and habits, self-sustainability levels and population vulnerability and social needs.*
- ✓ *To collect the available information and to develop a rural area resource/pressure accounting system to be used in Habitat's monitoring evaluation and project allocation activities.*
- ✓ *To design a rural monitoring system that will allow (i) to update on the basis of annual and seasonable time scheduling the accounting system on resources/pressure balance and (ii) to make a thorough investigation by means of family sample surveying on specific topics of policy concern. This part of the consultancy is directly linked to the Population Survey that will be carried on at the beginning of the year 2001"*

The consultancy has been divided into two periods (February 12ᵗʰ-March 12ᵗʰ, 2001) and a second period to be defined in coordination with Population Survey ongoing activities.
The present BTO Report makes reference to the first period activities/achievements.

Summary of Duties (60 working days) as in TOR

1. *To **collect** all the information produced so far on the socio economic structure of rural area population in the NI region and to **determine** relevant work previously performed by UN agencies and by any other local institution on this matter.*

2. *To **perform** an accurate analysis on information needs in rural areas resettlement programs according to Habitat's mandate including considerations relevant to Oil for Food Program.*

3. *To **design** a family sample survey (questionnaire and sampling methods) that will be used in the Population Survey and applied to rural areas of North Iraq.*

4. *To **produce** a qualitative and quantitative analysis also through interviews to opinion leaders and experts in the field of rural area analysis This analysis should yield:*

   - *4A - An analytical report on factors affecting rural area life stiles and habits and on levels of self sustainability in rural areas (climate, population pressure and quality of land, level of infrastructure, property of land, farming and marketing methods and rural-urban exchange, labour availability and exchange, household management schemes and consumption patterns).*

   - *4B - A spatial database on District and Sub-district (rural areas accounting system) level containing indicators covering the following items: natural resources distribution, population pressure, development potentials, infrastructure availability and needs.*

   - *4C - A final recommendation report where a policy framework will be designed with substantial reference given to: population wealth and vulnerability (sustainability), farming activities in rural/urban exchange perspective, population displacement and rural areas reconstruction.*

In particular, according to the Work Programme of the Survey Unit (February-April 2001) the Consultant has been requested during his first mission to:

1. *produce **"a rural area indicators database"** (Task Code B.2) to be integrate as section "Rural areas and farming" (Task Code B.5.4) into a "Unique population database",*

2. *deliver a **"rural area main patterns map"** to be matched with an "identity map" and the sampled WFP Food Agents map (to be produced by the Social Area Surveyor Consultant).*

Activities carried out and partial/provisional achievements

TOR's duty 1

> To **collect** all the information produced so far on the socio economic structure of rural area population in the NI region and to **determine** relevant work previously performed by UN agencies and by any other local institution on this matter.

The following sources/reports, already available in Erbil Habitat Office (*) or collected during the mission period (+), have been attentively analysed in order to fulfill the above point:

1. FAO Coordination Office for Northern Iraq, Annual Statistical Bulletin, n.2, Year 2000, Erbil, January 2001 (+)
2. UNICEF, Nutritional Status of Children Under Five, June 2000 (*)
3. WFP, Adequacy of SCR 986 Ration Questionnaire, Erbil 2000 (*)
4. FAO Coordination Office for Northern Iraq, Village Statistics Survey for the Year 2000, Erbil, 2000 (*)
5. Durham University Research Team, Final Report on Iraqi Kurdistan, DFID Policy Planning Unit, Northern Iraq, Durham-Erbil-Suleimaniyah-London, April 1997 – November 1999 (*+)
6. H.Hill, Durham University Research Team, Report on a Survey on Household Food Security in North Iraq, prepared for Western Asia Department, DIFID, September 1999 (*)

   Note: Sources 1, 3 and 6 include databases in digital format.

In addition the following digital information, collected during the mission period (+) or already available in he Erbil Office, have been analysed:
- (+) UNICEF, Urban Population database
- (+) UNICEF, Rural Population Database
- (+) UNICEF, MoRaD Survey Database
- (+) WFP list of malnourished children
- (+) WFP price time series
- (*) WFP population by sex age and sex

Finally the Consultant, before reaching the duty stations, already collected, georeferenced and processed a set of **NDVI** (Normalised Derived Vegetation Index) 10-day composite **NOAA-AVHRR 1Km remote sensing images** provided by USGS.

Note: The results of an extensive utilisation of the above images will be included in the Consultant final report.

Major outcomes

The documents and the available databases, re-processed by the Consultant according to finalized objectives, have provided **several useful information** on rural area patterns.
Through re-computation it has been possible:

1. to compile a provisional **rural area indicators database** to be integrated into a "Unique population database" (see TOR's duty 4B.1),

2. to collate significant information for carrying out field inspections in order to **calibrate the "farmer questionnaire"** (see TOR's duty 3),

3. To produce a provisional '**rural area main patterns map'** to be matched with an "identity map" (to be produced by the Anthropologist Consultant) and the sampled WFP Food Agents map (to be produced by the Social Area Surveyor Consultant), see TOR's duty 3.

TOR's duty 2
To **perform** an accurate analysis on information needs in rural areas resettlement programs according to Habitat's mandate including considerations relevant to Oil for Food Program.

In order to identify the above information needs the Consultant has identified the major lacunas of the existing sources.

The rapid socio-economic changes of Northern Iraq combined with an unusual quantity of rehabilitation programmes/projects make **quickly obsolescent** particularly those information which could be more useful to Habitat, according to its mandate.

As a consequence there is an **urgent needs** of getting more recent information on specific aspect of rural agro-ecological and human environment, to assist Habitat's targeting procedures, in collaboration with other UN, NGOs and NI Governmental rural development activities.

For instance, according to a recent UNICEF report *"the persisting problems of electrical power supply …. jeopardize the provision of safe water, and consequently menace the nutritional status of the young children"*. This fact seems to be at least one of the reasons explaining why, in spite of the OFF (oil-for-food) Programme*, "the prevalence of malnutrition has remained consistent over the past three years as shown by the six surveys conducted (August 96-Jun00)"*.

The recent literature has emphasized that the *"large amount of infant milk formula in the ration (3.6 kg/month) compared with complementary food (0.9 kg/month)"* has provoked a *"market increase in bottle-feeding of infants which … remains a potent cause of diarrhea, ill health and increased infant and child morbidity ands mortality risk"*.   Consequently a save-water policy should be jointly conceived with a regular power supply policy.

While a large debate is registered on SCR 969 quantitative and qualitative characteristics; only few concerns with **SCR 969 effects on agricultural practices and** –more in general- **on rural life**, are registered.

On drought prone areas and in area where the growing season is shorter -due to temperature constraints- farmers are abandoning the traditional cropping system, where barley played the role of a less risky crop and represented "the famine staple food".

Particularly at high altitudes barley was usually the only one cereal that could be cultivated satisfactorily. Farmers relayed on fast-maturing types to save their families from starving during food shortages. Not to be forgotten that barley has the ability of growing under dry conditions – a feature apparently related to deep and efficient root types (drought resistance) and is tolerant to marginal soils.

Many landrace barleys can have high levels of protein and sometimes are high in lysine; thus are exceptionally nutritious.
It is a fact that the Consultant, during his field visits, has verified that barley is still provided to pregnant and lactating women, as well to cattle before the plowing season.

Unfortunately the large availability of carbohydrates from SCR 969 Rations, provoking a loss of competitiveness for cereal prices and, in particular transforming barley from staple food to fodder, is impoverishing the diet composition. This is particularly true if we consider that in rural area the monthly intake of animal proteins is still extremely low.

To deal with *"self-sustainability levels and population vulnerability"* in rural areas -as requested in TOR's objective – compulsory calls for a better understanding such type of problems, and in particular match them with different scenarios of people wanting to go back to their more or less original places.

Consequently the Consultant has assisted the HHS Core Team in formulating appropriate questions on these matters; see Household questionnaire (form B) and "Children Datasheet" (appendix to form C).

More related questions have been formulated in the "Farmer questionnaire" (form D); see following paragraph.

The Consultant final report will define a precise list of type of information recommended for targeting and monitoring procedures of Habitat in rural areas.

TOR's duty 3

> To **design** a family sample survey (questionnaire and sampling methods) that will be used in the Population Survey and applied to rural areas of North Iraq.

During his mission, in coordination with the Survey Core Team and under the supervision of the HSS Consultant, a **"farmer questionnaire"** (form D) has been designed (see annex 1).

The questionnaire is focused on the identification of existing "self-sustainability levels and population vulnerability", as requested by Consultancy objective 1

In particular, in order to satisfy Habitat's mandate in rural area resettlement, including considerations relevant to Oil for Food Program, and in combination with other questionnaires forms (Settlement [A], Household [B], Individual [C]), the "Farmer questionnaire" has been designed with the purpose of providing a **set of relevant information on:**
- ✓ Availability of land and land use
- ✓ Land ownership
- ✓ Crop performances (current year as compared with the expected)
- ✓ Agricultural outcomes use (self consumption, marketed component, etc)
- ✓ Agricultural inputs
- ✓ Consistency and role of livestock production
- ✓ Fixed assists (availability, repossession phenomena)
- ✓ Rural-urban exchange
- ✓ Crop mix changes due to SCR 969 and reason for changes (supply side)

Note: Adequacy of SCR 969 Ration (demand side) has been included in the overall (urban and rural) "HH questionnaire" (form B).

Through an intensive field inspection activity and using RRA techniques (local key-informants and HHs), the Consultant has verified, during the questionnaire design phase, the adequacy of the suggested questions to the Habitat's main information needs.

Six rural sites, targeted through a previous analysis of existing information (see TOR's point 1) combined with a provisional remote sensing assessment, where selected.

Here below the list of the sites and the reason for selecting them:

Bararne (Amadia SD)	small village, low NDVI, economic-trees
Deralok outside the main village (Deralok SDt)	isolated houses along the road, small irrigation, rice
Akoian (Ravandoz SD)	middle village, average NDVI, mountain area, wheat/barley
Bnawasuta (Penjween SD)	border areas with Iran, agro-pastoral activities
Tawan (Quaradag SD)	hamlet in semi-dry area, low NDVI, wheat area
Hanara (Sangaw SD)	only-pastoral hamlet, very low NDVI

During RRA activities, a particular attention has been given to the respondent's attitude toward specific sensitive questions (f.i. HH' income and its components) in order – if necessary - to rephrase the above questions.

The outcome has been taken into account in compiling the questionnaire final version.

TOR's duty 4

> To **produce** a qualitative and quantitative analysis also through interviews to opinion leaders and experts in the field of rural area analysis.

Although few experts in the field of rural area analysis have been contacted/interviewed in order to finalise the rural questionnaire, this duty will be fully developed during the second mission. Here below the activities carried out according to sub-duties (4A, 4B and 4C)

TOR's duty 4A

> An analytical report on factors affecting rural area life stiles and habits and on levels of self-sustainability in rural areas (climate, population pressure and quality of land, level of infrastructure, property of land, farming and marketing methods and rural-urban exchange, labour availability and exchange, household management schemes and consumption patterns).

The expected analytical report will be provided at the end of the second mission

TOR's duty 4B

> A spatial database on District and Sub-district (rural areas accounting system) level containing indicators covering the following items: natural resources distribution, population pressure, development potentials, infrastructure availability and needs.

In particular, according to the Work Programme of the Survey Unit (February-April 2001) the Consultant has been requested, during his first mission:

1. To produce *"a rural area indicators database"* (Task Code B.2) to be integrate as section "Rural areas and farming" (Task Code B.5.4) into a *"Unique population database"*.
2. To deliver a *"rural area main patterns map"* to be matched with an *"identity map"* and the sampled WFP Food Agents map.

4.B1 A rural area indicators database (Task Code B.2)

As a result of data re-processing of collected information/databases a provisional **rural area indicators database** has been compiled and ready to be integrated into a "Unique population database".

The procedure adopted for a separate data re-processing of each original database has been carried out according to the following steps:

1. Geographical **re-aggregation** of different databases according to 73 sub-districts as previously decided by the Survey Core Team.

2. Using in re-processing procedure **only those statistical units with peculiar characteristics**, more meaningful for Habitat's needs (f.i. villages "presently occupied" [in the case of UNICEF1997 Survey]"; villages "not abandoned" [in the case of socio-economic data collected by FAO 1999 Village Survey] all villages [in the case of agro-ecological data collected by the same survey]

3. Identification of outliers through variables frequency distribution; correction (if an when necessary)

4. Starting from cleaned data matrixes (see annex 2: list of matrixes) an overall matrix with a set of **54 overall indicators** had been computed (the matrix contains some population estimations too, see annex 3)

5. A correlation matrix has been computed in order to evaluate indicators consistency.

4.B2 A rural area main patterns map

Starting from the overall indicators matrix, a subset of indicators (between those available) has been extracted in order to produce a tentative rural area typological map.

This attempt has been heavily limited by the **quality of data**, the relative **obsolescence** of part of them, slightly **different criteria** adopted in Northern Iraqi different parts when data were\are collected.

Nevertheless, due to the finality of the map (i.e. to countercheck - in combination with the "identity map" produced by the Anthropologist Consultant - the sampled WFP Food Agents map as defined by the Social Area Surveyor Consultant) **the result can be considered satisfactory.**

1. The above indicators subset has been firstly processed through "Simulation procedures" in order to recover - as far as reasonably possible - the maximum number of sub-districts to be submitted to a multi-factorial analysis.

2. Missing values or evident outliers has been simulated using a statistically highly sophisticated procedure offered by ADDATI software (kindly provided by Prof. Silvio Griguolo, University of Venice, Italy; procedure developed for WFP VAM (Vulnerability Analysis Mapping) Units.

3. For different reasons the final matrix contains 63 sub-districts (10 sub-districts has been excluded for lack of reliable information or too many missing values).

4. Having run several times a "Principal Component Analysis -> Not Hierarchical Cluster Analysis" sequential procedure, with more or less satisfactory results, the above indicators subset has been divided into active and supplementary variables. The content of the final matrix is listed here below (for sources see annex 4).

1 Sub_district code
2 Population (used as weight)
ACTIVE VARIABLES
3 Family Size
4 village average dimension
5 Cereal (W+B) cultivated area /total cult area (%)
6 Wheat/Barley ratio
7 legumes (chickpea + lentil) / cereals (% cultivated land)
8 fallow/arable
9 weighted number of animal heads x farmer
10 PASTORAL/ARABLE_LAND_RATIO
11 % IRRIGATED/TOTAL_ARABLE LAND
12 <6 years old %
13 >60 years old %
14 dependency rate (<15 - >60)
15 % villages with electricity
16 No. of water points per 1000 population
17 % of villages that have no water project and the distance to the source of water >0.5km
SUPPLEMENTARY VARIABLES
18 % of villages with irrigation channel(s) in use
19 % of villages with a public latrine in use
20 % of villages with a primary school building in use
21 % of villages with a health canter in use

As previously explained it is evident that indicators make reference to different dates, and that this fact affecst the quality of the results. Indicators 2, 3, 12 ..14 and 22 refer to 2000; Indicators 4 …11 refer to 1999; Indicators 15 ..21 refer to 1997.

The **63 most rural sub-districts** have been classified into 8 clusters. The distribution of the considered total population into 8 clusters is shown here below:

CLUSTER	1	2	3	4	5	6	7	8	TOT
NUMBER of SUB-DISTRICTS	8	7	16	9	6	6	8	3	63
% considered population	10.7	12.8	15.7	17.5	14.6	10.1	7.2	11.5	100.0

The cluster profiles are summarised in the following table.

CLUSTERS	1		2		3		4		5		6		7		8		total
Number of SUB-DISTRICTS	8		7		16		9		6		6		8		3		63
ACTIVE VARIABLES																	averages
HH' size	5.2	--	5.4	--	5.2	--	5.3	--	5.6	~~	6.5	++	5.9	++	6.7	++++	5.7
average village dimension	203	--	331	--	342	--	398	--	820	++	967	++	720	~~	1503	++++	629
Wheat+Barley/cult.land %	45.1	----	54.3	--	65.0	--	88.9	++++	80.5	++	67.9	~~	49.6	----	86.1	++	69.6
Wheat/Barley ratio	2.0	--	2.5	~~	1.7	--	1.3	--	2.5	~~	5.8	++++	3.0	~~	6.2	++++	2.9
legumes/cereals ratio	54.4	++++	21.6	~~	20.2	~~	8.6	--	9.8	--	31.0	++	39.1	++	8.2	--	21.6
fallow/arable land	7.1	----	0.3	----	42.1	++	51.2	++	30.3	~~	26.3	--	64.4	++++	42.6	++	33.0
livestock heads x farmer	8.9	--	9.6	--	9.2	--	24.2	++++	12.1	~~	9.4	--	5.5	--	6.2	--	11.7
pastoral/arable land %	0.7	~~	0.3	--	0.6	~~	0.7	~~	0.6	~~	1.1	++	1.3	++	0.2	--	0.6
irrigated/arable land %	27.6	++++	37.3	++++	13.6	~~	2.5	--	8.9	--	7.5	--	14.9	~~	2.9	--	13.7
<6 years %	15.5	--	17.2	--	17.2	--	16.4	--	19.3	++	21.9	++++	18.1	~~	19.5	++	18.0
>60 years %	6.1	++	5.8	++	5.8	++	6.0	++	4.7	--	4.3	--	5.2	~~	4.5	--	5.4
dependency rate	1.7	--	1.9	~~	1.8	--	1.6	--	2.1	++	2.5	++	2.0	~~	2.1	++	1.9
% villages with electricity	10.9	--	25.8	~~	11.0	--	19.5	--	58.6	++++	72.1	++++	22.3	--	35.2	~~	31.1
# water points x 1000 pop.	11.5	--	6.7	--	16.7	~~	9.2	--	24.1	++	21.3	~~	23.7	++	51.2	++++	19.6
water source >0.5km	18.0	++	26.2	++++	11.9	~~	6.1	--	8.6	--	7.1	--	8.8	--	2.6	--	11.1
SUPPLEMENTARY VARIABLES																	
% vill.irrig.channels in use	56.8	++	77.2	++++	30.1	--	0.1	----	32.5	~~	43.1	~~	85.0	++++	17.3	--	37.9
% vill.publ.latrine in use	13.5	++	11.6	++	14.6	++	11.9	++	10.7	~~	2.0	--	4.9	--	0.0	--	9.4
% vill.prim.school buil in use	17.3	--	23.2	--	16.7	--	33.3	++	35.7	++	31.7	++	30.7	++	28.6	~~	27.2
% vill.health center in use	25.8	++	27.8	++	12.4	~~	0.4	--	8.7	--	1.2	--	8.5	--	21.4	++	12.8
est. malnutrition rate	5.2	--	6.3	~~	6.6	~~	3.9	--	5.1	--	12.5	++	17.8	++++	8.6	++	7.4

Explanation of symbols
~~ = -0.2SD - +0.2SD
-- = -1SD - +1SD   ---- = > -1SD
++ = 0.2SD – +1SD   ++++ = > +1SD
Variables names are shortcut for editing reasons

In terms of geographical location the sub districts belonging to the same clusters are almost always contiguous.

A first sub-set, composed by the four clusters (Clusters 1, 2, 3 and 4), is almost exclusively located Southeasterly of an imaginary line cutting North Iraq into two parts and curiously running not far from the internal PDK/PUK border.

A second subset, composed by the other four clusters (Cluster 5, 6, 7 and 8), is – on the contrary – almost exclusively located Northwesterly of this imaginary line.

The map in the next page shows the geographic location of the 8 clusters.

Geographic location of the 8 clusters

RURAL AREA MAIN PATTERNS MAP
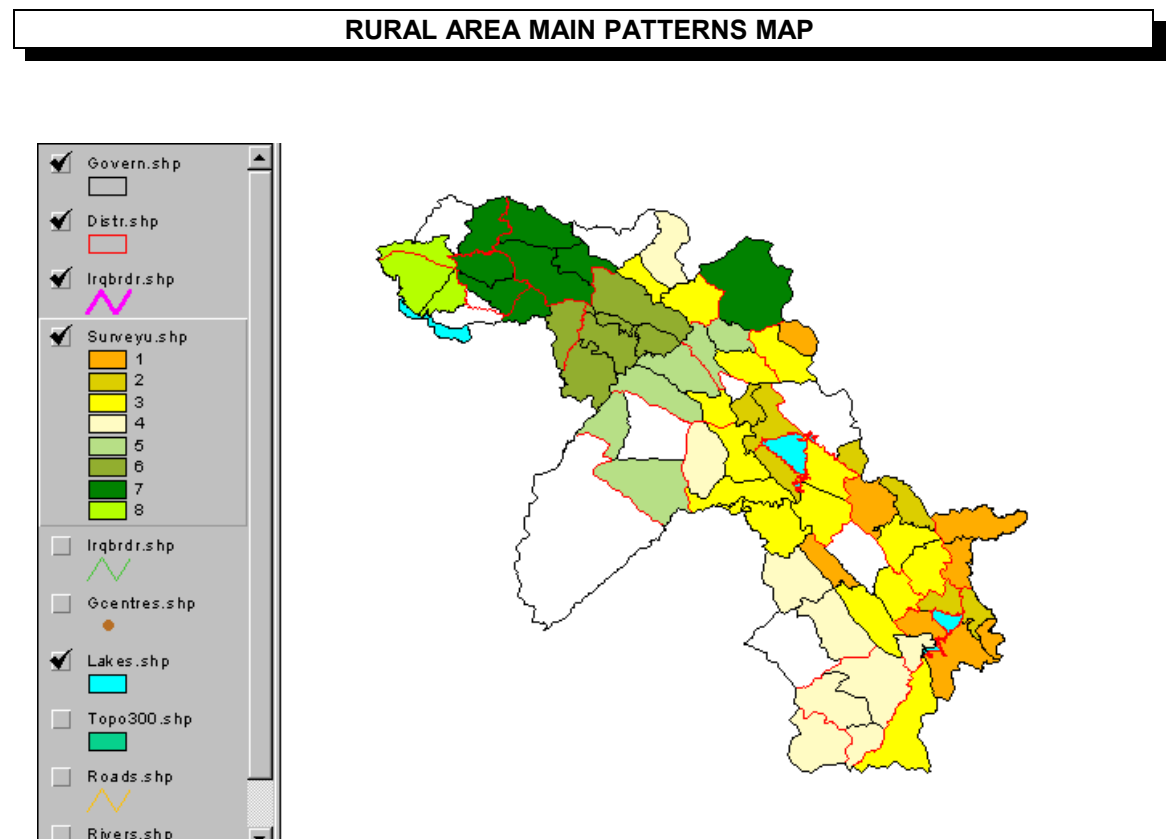
It is enough a quick glance to the cluster profiles to discover **significant demographic patterns**, **peculiar to the two geographical subsets**:
- ✓ Smaller villages in the Southern than in the Northern part of NI,
- ✓ More elderly in the Southern than in the Northern part, the opposite for the first age class (defined as "under 5").
- ✓ Dependency rate is higher in the Southern part.

This **dichotomic structure** has been expressed in the maps using **worm** (brown-yellow) **versus cold** (green**) colours**

On the contrary the **horographic-climatologic and agro-ecologic conditions dictate a different geographical pattern** that is –in a certain sense- surprisingly confirmed by infra-cluster differences:
- ✓ The predominance of cereals in the lower areas,
  - o where, in addition, wheat strongly prevails on barley
- ✓ while barley is still not marginal in the higher areas
- ✓ A still important role of pulses in the higher areas.

In the map there is an attempt to take into consideration, as far as possible, the above **crop mix patterns**, using **darker palettes** (within the worm and cold colour) when **pulses** are in general more important.

The cluster profiles can be read, in a first approximation, as a grid produced by the intersection of the above two components (demo versus agro-eco).

As a second level reading result, it is evident that starting from this plinth (demo versus agro-eco grid) each cluster is characterised by its peculiarity.

For instance **cluster 1** is peculiar for the importance of pulses, barley too is still important between cereals, irrigation plays an important role in agricultural practices.

Cluster 2 shows a similar profile, nevertheless this cluster is characterised by a more wheat\cereal crop mix.

Cluster 3 is barley/cereal crop mixed with lower pulses component; fallow (buar) component is important.

Cluster 4 emphasises the main characteristic of cluster 3, but in this case livestock assumes a very high importance.

Cluster 5 profile is the nearest to the Northern Iraqi averages, cereals are predominant at the expenses of pulsed, livestock component is significant, in general infrastructures are better.

Cluster 6 is similar to the previous (cluster 5) but wheat is strongly predominant in the cereal crop mix, nevertheless the role of pulses should not be underestimated.

Pulses are important too in **Cluster 7** (similar to Cluster 1 on this aspect), but in the case of tjhis cluster the major peculiarity consists in the extremely high level of fallow (buar) practices.

To **Cluster 8** belong only three sub-districts, they are strongly wheat/cereal specialised, fallow practices are important.

Note: An exhaustive list of sub-districts by cluster is contained in annex 5

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 during his second mission 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.

TOR's duty 4C
A final recommendation report where a policy framework will be designed with substantial reference given to: population wealth and vulnerability (sustainability), farming activities in rural/urban exchange perspective, population displacement and rural areas reconstruction.

The recommendation report will be provided at the end of the second missions

ANNEXES

Annex 1

North Iraqi Settlement and Household Survey

D) <u>FARMER QUESTIONNAIRE</u>

1. Family ID:

	F.A. sector	F.A.number	ID

2. Name of respondent (possibly the person mostly dedicated to HH's farming activity):

(in English) --- (in Arabic) ---------------------------------------

3. Land ownership and use

Mark only one of the following codes:

- ☐ 1 land is completely the property of the HH
- ☐ 2 land is all rented by the HH
- ☐ 3 partly owned, partly rented
- ☐ 4 used on the basis of some other agreement
- ☐ 97 REFUSED TO ANSWER
- ☐ 98 DON'T KNOW

4. If rented, or partially rented: which type of contract?

- ☐ 1 Fifty/Fifty ("Niwa ba Niwa)
- ☐ 2 One third ("Yak ba se)
- ☐ 3 One forth ("Yak ba chwar)
- ☐ 4 Rented from local authorities
- ☐ 5 Other (specify) ……………………………
- ☐ 97 REFUSED TO ANSWER
- ☐ 98 DON'T KNOW

5. Quantity of land by yearly use

Write in donums	Cultivated winter season		Cultivated summer season		Not cultivated	In fallow ("buar") (for more than one year)	Pasture
	rainfed	irrigated	rainfed	irrigated			
Average							
Last year (1999-2000)							
This year (2000-2001)			(expected)	(expected)			

14

6. Which crops your household harvested during 1999-2000 winter and summer seasons?
Specify consumption, selling, storage and payment in kind (if existing)
(include vegetables and fruits)

Crop Grown See codes	Unit	Harvested	Already Consumed	Already sold	Reason for selling	Still in storage for own HH use	Quantity given to land owner	Comments

Code of Crops: 1 = Weat   Code of unit: 1 = Kg

        2 = Barley   2 = Bag (50 kg)

        3 = Rice   3 = Bag (20 kg)

        4 = Corn   4 = Tin (18 kg)

        5 = Chickpea   5 = Ulba (of 10 kg)

        6 = Lentil   6 = Qaznakh (4 Qaznakh = 1 Ulba)

        7 = Bean   7 = Ruba (8 Ruba = 1 Qaznakh)

        8 = Sunflower   8 = gunny bag

        9 = Sesame   9 = red stripped bag (3 r.s.bag = 1Ulba)

        10= Peanuts   10 = other (specify)

        11= Tobacco

        12= Mash

        13= Cotton

        14= Green Leaves

        15= Other vegetables

        16 = Permanent Crops (i.e. Fruit)

        17= Other (specify)

Reason for selling :

        1 = in order to meet food needs

        2 = in order to meet education needs

        3 = in order to meet health (medicine, doctor) needs

        4 = in order to meet food/educational/health mixed needs

        5 = in order to meet cultural events (weddings, funerals)

        6 = in order to buy clothes/shoes

        7 = in order to buy agricultural tools

        8 = in order to buy not-basic consumption items (f.i. radio, watches, tv set, …)

        9 = other (specify)

        97 = REFUSED TO ANSWER

7. Do you think that the (1999-2000) agricultural year was a ……….. year?

☐ 1   outstanding

☐ 2   good

☐ 3   normal (average)

☐ 4   poor

☐ 5   very poor

☐ 6   a crop failure

☐ 98   DON'T KNOW

8. Should the last agricultural year (1999-2000) had been normal, how much you would have produced ?

	Crop1	Crop2	Crop3	Crop4	Crop5	Crop6	Crop7	Crop8	Crop9	Crop10	Crop11
Type of crop											
Unit											
Quantity											

Note: use the same codes of question 6

9. During the last (1999-2000) winter and summer seasons did you use ?

| Fertilizers | Yes   No
| Herbicides | Yes   No
| Pesticides | Yes   No

10. Do your family own any bird or animal ?

☐ 1   Yes
☐ 2   No

11. Type of animals or birds you have, and how many you sold (during the last 12 months)

Animal Type	No. of Heads (now)	Sold during the last year	Animal Type	No. of Heads (now)	Sold during the last year	Animal Type	No. of Heads (now)	Sold during the last year
Cows			Sheep/Mutton			Chicken		
Oxen			Goat			Duck		
Horses						Goose		
Mules			Rabbits			Turkey		
Donkey			Bee hives (number of)					

Use the same codes of question 6

12. Reason for selling:

☐ 1   In order to meet food needs
☐ 2   In order to meet education needs
☐ 3   In order to meet health (medicine, doctor) needs
☐ 4   In order to meet food/educational/health mixed needs
☐ 5   In order to meet cultural events (weddings, funerals)
☐ 6   In order to buy clothes/shoes
☐ 7   In order to buy agricultural tools
☐ 8   In order to buy not-basic consumption items (f.i. radio, watches, tv set, …)
☐ 9   other (specify)
☐ 97   REFUSED TO ANSWER

13. Do the quantities sold last year represent a typical yearly pattern ?

☐ 1   Yes
☐ 2   No

14. If sold less:

- ☐ 1   it was not necessary to sell more (better agro-pastoral performances)
- ☐ 2   we decided to consume more
- ☐ 3   other (specify)
- ☐ 97   REFUSED TO ANSWER

15. Do you have backyard garden where you can grow vegetables/fruit for daily consumption?

- ☐ 1   Yes
- ☐ 2   No

16. Do you grow seasonal vegetables/fruit throughout this year in this garden ?

- ☐ 1   Yes
- ☐ 2   No

17. Which of the following fixed assets do you have/had during the last 12 months?
Have you sold some of your fixed assets during the last 12 months?
Specify which one and why

Items	1 = yes 2 = not	Sold during the last 12 months 1 = yes , 2 = not	Reason for selling (see codes)
Hoe			
Spade			
Sickle			
Pick/Pickaxe			
Heavy Hammer			
Ox Plough			
Heavy Plough			
Tractor			
Trolley			
Thresher			
Water Pump			
Generator/Diesel engine			
Grain storage bin			
Other (specify)			

CODES of reason for selling:
      1. NEEDS OF CASH
      2. ANY MORE USEFULL
      3. OTHER SPECIFY ....

18. Does some HH member help you in agricultural activities?

- ☐ 1   yes, adult(s) both men and women
- ☐ 2   yes, adult(s), only men
- ☐ 3   yes, adult(s), only women
- ☐ 4   yes, adult(s) and children
- ☐ 5   yes, children
- ☐ 6   No

19. Did you hire casual labor to work on your land during the last seasons?

☐ 1 Yes
☐ 2 No

20. Did you borrow for agricultural activities during the last 12 months?

☐ 1 Yes
☐ 2 No

21. Do you have debts related to agricultural activities?

☐ 1 Yes
☐ 2 No

22. Do you normally buy your seeds?

☐ 1 yes totally
☐ 2 yes, but only a part
☐ 3 no, but I get from SCR 969 / FAO
☐ 4 not at all

23. If yes, where ?

☐ 1 **in the same village**
☐ 2 in a near village
☐ 3 in a near collective town
☐ 4 in your sub-district main town
☐ 4 in a village/ town of an other sub-district
☐ 5 in your district town

24. Where do you sell your products ?

☐ 1 **in the same village**
☐ 2 in a near village
☐ 3 in a near collective town
☐ 4 in your sub-district main town
☐ 5 In the nearest village/town of an other district
☐ 6 Traders come to buy here
☐ 7 I DON'T SELL
☐ 8 I deliver to local authorities silos……………………………..
☐ 9 Other (Specify) ………………………………..

25. Who normally goes to sell ?

- [ ] 1   You
- [ ] 2   Your wife/husband
- [ ] 3   **One of your adult sons**
- [ ] 4   **Some relative/neighbor**

26. Who normally go to buy clothes/shoes?

- [ ] 1   You
- [ ] 2   Your wife/husband
- [ ] 3   **Other (f.i. relatives/neighbors)**

27. Did you change your crop mix during the last five years?

- [ ] 1   Yes
- [ ] 2   No

28. If Yes, for which crops you increased/decreased the planted area? And for which reasons?

Type of Crop See codes	Increased 1 = Yes	Decreased 1 = Yes	Reason for Increasing decreasing

Codes of the reasons:

1 = due to SCR 986 Ration basket composition
2 = necessary in spite of SCR 986 Ration
3 = due to too low producer prices
4 = due to environmental changes
5 = due to changes of term of trades between different crops
6 = due to additional extra-farm incomes allowing to buy staple food
7 = Other (specify) ……………..
97 = REFUSED TO ANSWER
98 = DON'T KNOW

SURVEYOR'S REMARK SECTION

A.   Was anybody else present during the above interview?

A1 Any one of the member of the HH
- ☐ 1   Yes
- ☐ 2   No

A2 Other people, not member of the HH
- ☐ 1   Yes
- ☐ 2   No

B.   How did the respondent understand the questions?
- ☐ 1   Understood well
- ☐ 2   Did not understood well
- ☐ 3   Understood poorly

C.   In general, what was the respondent's attitude toward the interview?
- ☐ 1   Friendly, interested
- ☐ 2   Not particularly interested
- ☐ 3   Impatient, worried

D.   Assess sincerity and openness of the respondent
- ☐ 1   Quite introverted, insincere
- ☐ 2   As sincere and open as the majority of respondent
- ☐ 3   Notably more sincere and open than the majority

Interview delivered on ....

I certified that I conducted the survey in accordance to the instructions and personal intereview method, and with the respondent selected in accordance with the instrucion

Signature of the surveyor ....

Filename: Farmer_F.doc

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Annex 2

List of re-processed data matrixes

Filename
    Malnu_wfp2000_1.xls
    original source: WFP list of malnourished children

Filename
    UNICEF_97_VILL_OCC.xls
    original source: UNICEF, MoRaD Survey Database

Filename
    age_grou_F&M_1.xls
    original source: WFP population by sex age and sex

Filename
    UNICE_97_4.xls
    original source: Durham University Research Team, Final Report on Iraqi Kurdistan, DFID Policy Planning Unit, Northern Iraq, Durham-Erbil-Suleimaniyah-London, April 1997 – November 1999

Filename
    FOR_A_6.xls
    original source: FAO Coordination Office for Northern Iraq, Village Statistics Survey for the Year 2000, Erbil, 2000 (*)

Filename
    ToTpopBySubD_1.xls
    Original source: WFP population by sex age and sex

Annex 3

OVERALL DATA MATRIX – list of indicators

list of indicators - filename: overall_matrix_1.xls

1	Sub-district	ToTpopBySubD_1.xls
2	Population	ToTpopBySubD_1.xls
3	Family Size	ToTpopBySubD_1.xls
4	persons x house	FOR_A_6.xls
5	homo_dishomogeneity village dimension (CoV)	FOR_A_6.xls
6	village average dimension	FOR_A_6.xls
7	Farmers/Pop%	FOR_A_6.xls
8	arable land x farmer (ha)	FOR_A_6.xls
9	Cereal (W+B) cultivated area /total cult area (%)	FOR_A_6.xls
10	Wheat/barley ratio	FOR_A_6.xls
11	cereal (W+B) area cultivated x farmer (ha)	FOR_A_6.xls
12	legumes (chickpea + lentil) / cereals (% cult.land)	FOR_A_6.xls
13	fallow/arable	FOR_A_6.xls
14	weighted number of animal heads x farmer	FOR_A_6.xls
15	Poultry_x_farmer	FOR_A_6.xls
16	% ARABLE LAND/TOTAL LAND	FOR_A_6.xls
17	%NON-ARABLE/TOTAL LAND	FOR_A_6.xls
18	%ORCHARDS/TOTAL LAND	FOR_A_6.xls
19	%FORESTRY/TOTAL LAND	FOR_A_6.xls
20	%BUILDING/TOTAL LAND	FOR_A_6.xls
21	%NATURAL_PASTURE/TOTAL LAND	FOR_A_6.xls
22	ARABLE _LAND/NOT_ARABLE_LAND_RATIO	FOR_A_6.xls
23	PASTORAL/ARABLE_LAND_RATIO	FOR_A_6.xls
24	%GUARANTEE_RAINFALL	FOR_A_6.xls
25	% SEMI-GUARENTEE_RAINFALL	FOR_A_6.xls
26	%NOT_GUARENTEE_RAINFALL	FOR_A_6.xls
27	% IRRIGATED/TOTAL_ARABLE LAND	FOR_A_6.xls
28	<6%	age_grou_F&M_1.xls
29	0-18	age_grou_F&M_1.xls
30	% working_age	age_grou_F&M_1.xls
31	"over60%	age_grou_F&M_1.xls
32	dependency ratio (<15 - >60)	age_grou_F&M_1.xls
33	sex ratio (M/F)	age_grou_F&M_1.xls
34	estimated malnutrition rate	Malnu_wfp2000_1.xls
35	Male %	UNICEF_97_VILL_OCC.xls
36	Female %	UNICEF_97_VILL_OCC.xls
37	Population under 5 years %	UNICEF_97_VILL_OCC.xls
38	sex ratio (M/F %)	UNICEF_97_VILL_OCC.xls
39	% villages with electricity	UNICEF_97_VILL_OCC.xls
40	% of villages with at least one mosque	UNICEF_97_VILL_OCC.xls
41	% of villages with at least one church	UNICEF_97_VILL_OCC.xls
42	% of villages with irrigation channel(s) in use	UNICEF_97_VILL_OCC.xls
43	% of villages with irrigation channel(s) not working	UNICEF_97_VILL_OCC.xls
44	% of villages with a public latrine in use	UNICEF_97_VILL_OCC.xls
45	% of villages with a public latrine not in use	UNICEF_97_VILL_OCC.xls
46	% of villages with a primary school building in use	UNICEF_97_VILL_OCC.xls

	% of villages with a primary school building destroyed	
47		**UNICEF_97_VILL_OCC.xls**
48	**% of villages with a health center in use**	**UNICEF_97_VILL_OCC.xls**
49	**% of villages with a health center not in use**	**UNICEF_97_VILL_OCC.xls**
50	**% of villages with a health center destroyed**	**UNICEF_97_VILL_OCC.xls**
51	**population under 5 years %**	**UNICE_97_4.xls**
52	**Percentage of villages where there are no household latrine**	**UNICE_97_4.xls**
53	**No. of water points per 1000 population**	**UNICE_97_4.xls**
54	**% of villages that have no water project and the distance to the source of water >0.5km**	**UNICE_97_4.xls**
55	**% of villages that have a public latrine that is in use**	**UNICE_97_4.xls**
56	**Population of found villages**	**FOR_A_6.xls**
57	**Families**	**ToTpopBySubD_1.xls**
58	**Population**	**UNICEF_97_VILL_OCC.xls**
59	**Total population**	**UNICE_97_4.xls**

filename: overall_ matrix_doc_1.xls

Annex 4

Indicators used for producing the "rural area main patterns map"

list of indicators - filename: agroeco4.dat

	SOURCE
1 Sub_district code	
2 Population (used as a weight)	ToTpopBySubD_1.xls
ACTIVE VARIABLES	
3 Family Size	ToTpopBySubD_1.xls
4 village average dimension	FOR_A_6.xls
5 Cereal (W+B) cultivated area /total cult area (%)	FOR_A_6.xls
6 Wheat/barley ratio	FOR_A_6.xls
7 legumes (chickpea + lentil) / cereals (% cult.land)	FOR_A_6.xls
8 fallow/arable	FOR_A_6.xls
9 weighted number of animal heads x farmer	FOR_A_6.xls
10 PASTORAL/ARABLE_LAND_RATIO	FOR_A_6.xls
11 % IRRIGATED/TOTAL_ARABLE LAND	FOR_A_6.xls
12 <6%	age_grou_F&M_1.xls
13 >60%	age_grou_F&M_1.xls
14 dependency ratio (<15 - >60)	age_grou_F&M_1.xls
15 % villages with electricity	UNICEF_97_VILL_OCC.xls
16 No. of water points per 1000 population	UNICE_1977_4.xls
17 % of villages that have no water project and the distance to the source of water >0.5km	UNICE_1977_4.xls
SUPPLEMENTARY VARIABLES	
18 % of villages with irrigation channel(s) in use	UNICEF_97_VILL_OCC.xls
19 % of villages with a public latrine in use	UNICEF_97_VILL_OCC.xls
20 % of villages with a primary school building in use	UNICEF_97_VILL_OCC.xls
21 % of villages with a health centre in use	UNICEF_97_VILL_OCC.xls
22 estimated maln rate	Malnu_wfp2000_1.xls

filename: agroeco4.dat

Annex 5

List of sub-districts by cluster, as represented in the "rural area main patterns map"

CLUSTER 1

NUMBER OF SUB-DISTRICTS : 7   12.75% of considered total population

ER32	HAJI OMERAN
SU41	MAWAT
SU52	BAZIAN
SU61	GARMIC
SU62	NALPAREZ
SU72	ZARAIAN
SU82	SIRWAN
SU83	BEYARA

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **ZARAIAN**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **HAJI OMERAN**

CLUSTER 2

NUMBER OF SUB-DISTRICTS : 7   12.75% of considered total population

SU11	BETWATA
SU12	CHWARQURNA
SU23	HERO
SU31	CHNARAN
SU42	BASNEY
SU71	SAIDSADIQ
SU81	KHORMAL

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **CHWARQURNA**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **HERO**

CLUSTER 3

NUMBER OF SUB-DISTRICTS : 16   15.66% of considered total population

DB11	QARANAW
DB12	AGHJALAR
DB41	MAIDAN
ER12	BARZAN
ER13	MERGASUR
ER24	ROWANDOZ
ER31	CHOMAN / GALALA
ER43	SHAQLLAWA / HERAN
ER62	KOYSINJAQ
ER63	TAQ TAQ
SU32	BINGIRD
SU33	SURDASH
SU43	CHWARTA
SU44	BARZINJA

SU53	ARBAT
SU54	QARADAGH

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **KOYSINJAQ**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **QARANAW**

CLUSTER 4

NUMBER OF SUB-DISTRICTS : 9   17.47% of considered total population

DB13	CHAMCHAMAL
DB14	SANGAW
DB21	DARBANDIKHAN
DB31	PEBAZ
DB32	TILAKO
DB33	SMOOD
DB51	KIFRI
ER11	SHERWAN MAZIN
ER61	SHORSH

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **KIFRI**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **TILAKO**

CLUSTER 5

NUMBER OF SUB-DISTRICTS : 6   14.61% of considered total population

ER22	SORAN / DIANA
ER23	KHALEFAN
ER41	HAREER
ER42	SALAHADDIN
ER51	KHABAT / GWER
ER54	QUSHTAPA

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **SALAHADDIN**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **KHABAT / GWER**

CLUSTER 6

NUMBER OF SUB-DISTRICTS : 6   10.14% of considered total population

DU52	QASROK
DU61	NALHA
DU62	AKRE
DU63	GIRDASEEN
DU64	SURCHY
DU65	BARDA RASH

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **GIRDASEEN**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **NALHA**

CLUSTER 7

NUMBER OF SUB-DISTRICTS : 8   7.19% of considered total population

DU12	GULY
DU21	KANI MASI
DU23	SARSINK
DU24	AMEDI
DU41	DOSKY
DU42	ZAWITA
DU51	ATROSH
ER21	SADEKAN

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **AMEDI**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **ZAWITA**

CLUSTER 8

NUMBER OF SUB-DISTRICTS : 3   11.50% of considered total population

DU13	REZGARY
DU31	SLEVANI
DU32	SUMMAIL

SUB-DISTRICT CLOSEST TO THE CLUSTER CENTRE: **SLEVANI**
SUB-DISTRICT FARTHEST AWAY FROM THE CLUSTER CENTRE: **SUMMAIL**