Statistics Norway
Department of Social Statistics

*Helge Brunborg, Svein Gåsemyr,
Gotfred Rygh and Johan-Kristian Tønder*

Development of Registers of People, Companies and Properties in Uganda: Report from a Norwegian Mission

Preface

The Norwegian Government is supporting several projects in Uganda aiming at developing the private sector. Administrative registers of good quality on population, establishments and enterprises, land titles and properties, have been recognized by the Ugandan Government as an important condition for improving the private sector. Such registers would also contribute to the efficiency of the public sector, as well as easing the "bureaucratic burden" of the residents of Uganda, i.e. in their transactions with local and central Government.

As part of the process to reach this goal a Ugandan delegation, headed by the Hon. Minister of Planning, Isaac Musumba, visited Norway in October/November 2001. The purpose of this visit was to study the different registers in Norway, how they are operated and how they feed into each other. Following this visit, the Government of Uganda requested Statistics Norway to make an assessment of the existing registers in Uganda and how they can be further developed. The present report is based on a two-week visit to Uganda, 17-29 March 2003, in which meetings were held with a number of institutions in Kampala, Entebbe and Arua, see the attached Terms of Reference, Schedule of meetings, and Persons met. The mission was funded by the Norwegian Embassy in Kampala.

The report presents and discusses each type of register separately in chapters 1-3. Security issues are discussed in chapter 4.

In our preliminary draft report we recommended that a study of legal issues concerning administrative registers in Uganda be carried out. This has later been done but we did not have the opportunity to integrate the findings of the study into the mission report.[1]

The members of the appraisal team were Johan Kristian Tønder (team leader), Helge Brunborg and Svein Gåsemyr from Statistics Norway, and Gotfred Rygh from the Norwegian Mapping Authority.[2]

The Team would like to thank everybody we met for friendly reception, interesting and fruitful discussions and for providing important information. We would especially like to thank Imelda Atai and Augustine Wassago of UBOS and Sam Kajoba and Hans Venvik of the Norwegian Embassy for organising the visit and for commenting on the draft report. Winifred Nankya Mukalazi of UBOS made useful comments while temporarily working at Statistics Norway.

Contents

List of Acronyms

BDR	Birth and Death Registration
BIN	Business Identification Number
BR	Business Register
CPR	Central Population Register
DBR	Division for Business Register
GIS	Geographical Information System
GPS	Global Positioning System
HRB	Household Register Book
ILO	International Labour Organisation
ISIC	International Standard Classification of all Economic Activities
IT	Information Technology
LC I	Local Council I (Village in rural areas)
LC II	Local Council II (Parish)
LC III	Local Council III (Sub-County)
LC V	Local Council V (District)
LSSP	Land Sector Strategic Plan
LUR	Legal Unit Register
NACE	Nomenclature générale des Activités économiques dans les Communautés Européennes
NORAD	Norwegian Agency for Development Cooperation
PDC	Parish Development Committee
PIN	Personal Identification Number
RGD	Registrar General Department of Ministry of Justice and Constitutional Affairs
TIN	Tax Identification Number Register
ToR	Terms of Reference
UBOS	Uganda Bureau of Statistics
UNICEF	United Nations Children's Fund
URA	Uganda Revenue Authority
USAID	United States Agency for International Development
USD	United States Dollar
VAT	Value Added Tax

Executive summary

After having reviewed the situation the Team has found that there is considerable potential for improvement, modernisation and expansion of various registers in Uganda, in spite of Uganda being a very poor country. The Team recommends that:

- The Government of Uganda should aim at establishing central computerised registers of population, establishments and enterprises, and land titles and properties.
- Unique numbers of persons, enterprises and properties should be introduced and widely used.
- The registers should be the only administrative sources of such information in Uganda and be used by all Ugandan organizations and institutions, both public and private.
- The registers would be central data sources and tools for the Ugandan system of official statistics.
- Various Government institutions need to collaborate on the establishment of and running of the central registers.
- After decisions on the design of the system have been made, the legal framework will most likely need to be amended.

Central Population Register

A Central Population Register (CPR) records and identifies every person who is or has been a resident of the country since a given date, with a residence address which is specific as possible. The register may be the basis of a system for assigning unique personal identity numbers (PINs) to everybody, and for producing identity cards. Both are important means for contributing to the development of democracy and the fight against corruption and other criminality.

The main users of the CPR would be public institutions administering the rights and the obligations of the population, such as the Electoral Commission, health care institutions, educational institutions, drivers licence authority, tax administration, law and order institutions. It is essential that persons with rights and obligations be included in the same register. A society cannot give its people rights (voting, access to education and health care, etc.) if the same people are not willing to do their duties to the society (pay taxes, abide by law and order, etc.). By nature people are more willing to be included in a register for rights than for obligations. Therefore, the Government should inform the people that there should be only one common register including the basic particulars of each person, such as name, date of birth, and address.

There is also a need for an authorized identification of persons in the private sector. Banks, insurance companies and other enterprises need to have the possibility to reach their customers. Registers of enterprises and properties are not complete if they do not have unique identification about people in charge of an enterprise or owners of a property.

Finally, a CPR of good quality would give the national statistical institute (UBOS) an excellent possibility to produce population statistics.

Although establishing and running the proposed registers will be costly, there would in the long run also be considerable savings. For example, if an efficient CPR is established the Uganda Revenue Authority would save costs on keeping the register of taxpayers, as well as increase the tax revenue since it would become more difficult for people to have different identities and escape their obligation to pay taxes. Another saving would be reduced costs to produce the voters' list before an election since it may be based on the CPR.

There are two realistic methods of establishing a CPR. One is to use the Population Census 2002 as the basis, and the birth and death registration supplemented with registration of peoples' movements, to update the register. This solution has technical and economical advantages, but there may be legal restrictions. Another problem is that it may be difficult to combine the identity information from the census and the registration on births, deaths and migrations at the individual level.

Another solution would be to do a community registration of all households and their usual members and use this is as the basis, and registration of births, deaths and migrations to update the information. The advantage of this solution is that there are apparently no any legal obstacles against it. This solution would not be an easy task to follow up, however, practically as well as economically.

Both solutions have the problem that people may be uncomfortable about reporting deaths and movements of household members to the authorities.

Several projects, including a legal study, would have to be done before a conclusion about the methods could be reached.

Business registers
The starting point for developing the Ugandan business registers is the existing administrative business registers and the so-called Statistical Business Register, which which was compiled after the recently concluded Census of Business Establishments (COBE) 2001/2002. The population of these registers is economic units in the *formal sector*, according to the definition of ILO. To develop the Statistical Business Register into a regularly updated proper register, UBOS needs information about new businesses that have started after the reference date of the Census. The main principle is that information about new units should be collected from the administrative business registers.

The main challenge related to the operation of the existing Ugandan administrative business registers is to ensure that all registers have a complete coverage of the economic units of interest. One important measure to improve the coverage of businesses is to co-ordinate the efforts of each register in the development of efficient procedures for updating the registers, i.e. to capture new units and non-active registered units.

The Team recommends that government agencies should co-operate in developing an integrated system of business registers. We propose to establish an administrative Legal Unit Register (LUR) with the objective of identifying all Ugandan economic units and assign a unique and official Business Identification Number (BIN) to each unit. The official BIN should to be used as identifier in all administrative business registers as well as in the statistical Business Register of UBOS.

It is also necessary to study legal issues and conduct several studies before a final plan can be fixed.

Land and property registers
The Land Sector Strategic Plan (LSSP) is the main framework for projects aiming at improving the land administration system and institutions in Uganda. The Land Registry needs to be modernised and this will be done through the LSSP. A detailed plan for the Land information system is under preparation by the Swedish company SwedSurvey.

The LSSP also includes project plans for re-establishing the geodetic network, systematic land demarcation, and decentralisation of the administrative work. The LSSP will cost about 90 mill USD and donor funding will be invited.

The Register of Land and Titles is responsible for registering leaseholds in Uganda. The register covers less than 15 percent of the country and 50 percent of the registered documents are obsolete. The register is in a poor physical condition and there is a severe lack of resources. Modernising the register should be included in the development of the land information system.

Identification numbers
An overarching issue is the strong need for unique and universal identification numbers for persons, businesses and land properties. These numbers should be used by *all* registers with information about persons, establishments and enterprises, land titles and properties, and the registers of the Registrar General, as well as the registers of voters, taxpayers, government employees, passport holders, driving permits, stu-

dents, hospital patients, etc. The identification numbers should also be used by the private sector, such as banks, insurance companies and schools. Finally, the personal identification number (PIN) should be printed on the national identification card.

Attention should be given to the principle and design of the PIN, how it should be issued and by which institution, at what regional level and at what stage, as well as how the residents of Uganda should be informed about the number assigned to them. The assignment should be done in close cooperation with the CPR. A description of some of the aspects that need to be taken into account is described in section 1.6.

Address system

There is a great need for implementation of a countrywide system of addresses in Uganda, both for persons, businesses and land properties. An address is necessary to locate a person, a business and a property. The Team recommends that the address system should be developed inside LSSP or in close connection with it. The Team is proposing some minor projects that may be supported by Norway as part of the LSSP.

There will probably be a necessity to propose and adopt an act for a system and administration of addresses.

Security issues

There is always a danger of misuse of a system of registers with sensitive data on individual persons and enterprises, by criminals, corrupt officials and others, for economic, political or other reasons. Consequently, there is a need for evaluating the risk for misuse and designing measures to minimise the potential for misuse, to be supported by appropriate legislation.

1 Population registers

1.1 Introduction

Uganda already has several registers of persons, or rather lists of persons, on paper or electronically. There is, however, no link between these registers. This makes it very difficult to combine information from the registers and also to update them with data from other registers. This is unfortunate since it has been very costly to establish some of these registers, especially the Electoral Register and the Population Census. Some of these costs could have been reduced if there had been a more unified way of establishing a multi purpose central register.

One way of doing this would be to establish a Central Population Register (CPR). This register may be the basis for a system of assigning unique Personal Identity Numbers (PINs), one and only one number to each of the persons in this register, and for producing identity cards.

In this chapter we will discuss the methodology and feasibility of establishing a modern CPR in Uganda. Only a few countries in the world have such registers, mainly the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden). A few other countries have registers that are similar but not quite as good, such as Belgium. Large developed countries such as the USA, UK, France and Germany do not have a CPR. A brief presentation of the history of population registration in Norway is given in Appendix 4.

Some may question the feasibility of introducing an advanced population register system in a poor country like Uganda, which lacks the long tradition of the Nordic countries, administrative and physical infrastructure, as well as the economic basis for funding it. The Team is of the opinion, nevertheless, that most of the elements required for a CPR in Uganda are already in place and only need to be developed and co-ordinated, with some external assistance. The Team has learned about several plans for introducing population registers and identification numbers. These efforts need to be coordinated to avoid unnecessary costs and to achieve a unified system.

1.2 What is a Central Population Register?

A Central Population Register should include identifying information about every person who is or has been a resident of the country, and the address or place where the person is residing. The most common variables in a CPR are:
- Surname and first name
- Date of birth
- Sex
- Address (village, street and number, etc)
- Place (or country) of birth
- Name or ID number of father and mother
- Marital status
- Name or ID number of spouse
- Citizenship

A unique Personal Identification Number (PIN) is also an essential variable in a CPR. This number is used both to administer the CPR and to link it up with other registers of persons using the same PIN. A PIN can be *a sequential number* or *contain information* such as date of birth, see section 1.6. When a PIN is assigned it is important that the same person cannot have more than one number and that two different numbers shall not be assigned to the same individual. A CPR makes it easier to ensure that these conditions are met.

Most of the variables mentioned above are required to identify persons, called identifiers. The last three variables are usually not necessary to identify a person but are required for legal purposes, such as inheritance, voting and passports. A CPR may also include variables such as educational attainment and occupation, but it is more common to keep such information in special registers and employ the PIN to link and use the variables for administrative or statistical purposes.

An important characteristic of a CPR is that the dates of changes of all variables are included, both when the event *actually* took place, such as a birth, and the date of *entering* data about the event into the CPR, which could be several months later.

People should never be deleted from a CPR, once they are correctly entered, but the code for the current status should be changed when a person dies or emigrates, for example from "living in the country" to "dead" or "emigrated" (or to "unknown status").

To establish and run a CPR we need a starting point, i.e. the initial population, and routines and data for updating the initial population with information about births, deaths and migrations, as well as other changes such as change of name or marital status. If there is no updating the CPR will gradually become more and more obsolete – and will consequently lose its value as an administrative and statistical register. It is a greater challenge to operate a good system for updating the CPR than to establish the initial population.

A reported *death* or *migration* should lead to an update of the information about that person in the CPR. When a *birth* is reported, the PINs of the parents should be entered into the register as part of the record for the newborn, as name (and occupation?) of the parents are required by the Registrar of Births and Deaths to issue the so-called long birth certificate. Information about the parents of children is also important for immunisation, schooling, etc. Finally, data on the parents, especially the mother, are required to enable UBOS to make statistics on births by age and parity of the mother, age-specific fertility rates, total fertility rate, etc.

There is currently only one realistic source for *updating* a CPR in Uganda, namely the birth and death registration system, which will be discussed in section 1.4. There are, however, four or five possible sources for *establishing* the initial population of the CPR, which are presented in section 1.5.

1.3   Use of a CPR

The main users of the CPR would be public institutions administering the rights and obligations of the population. It is very important that persons with rights and with duties are included in the same register. A society cannot give its people rights (voting, access to education and health care, etc) if the same people are not willing to fulfil their obligations to the society (pay taxes, follow law and order, etc). By nature people are more willing to be in a register for rights than for duties. Therefore, the Government should inform the people that there should be only one common register including the basic particulars of each person, such as name, date of birth and address.

There is also a need for an authorized identification of persons in the private sector. Banks, insurance companies and other enterprises need to have the possibility to reach their customers. Registers of assets and cars need to have an identification of the owner and the correct information about their place of residence. Employers need accurate and unique identification of their employees for paying salaries, deducting taxes for the revenue authority or when making payments to a pension or social security system. A register of enterprises is not complete if it does not have unique identification about the owners and chief executives of the enterprises.

Registers or lists of people and households are also of great value at the local level – ranging from the lowest level (LC I) to the district (LC V). Local institutions need information about the size of the population, both the total and in certain age groups, to plan and administrate immunisation of children, primary education, etc. There is also a need to know the population at risk, e.g. to estimate infant mortality rates at sub-county and parish level. In some sub counties development grants have been apportioned to the various parishes according to the population size.

Besides administrative use of a CPR and the PIN, a CPR is also a very important source of statistical data. It would give the national statistical institute (UBOS) an excellent possibility to produce population statistics, both at national and regional levels. Population statistics are necessary for making population projections and for planning of services that people require, such as schooling, health care and housing.

Finally, a CPR would be the best basis for issuing national ID cards, based on the PIN. Without a PIN it is virtually impossible to make sure that the same person cannot get several ID cards with different identities. Unique and reliable ID cards would be an important element in the fight against crime and corruption. Moreover, with such cards it would be much more difficult for people to run away from their electricity, water and other bills.

A number of institutions in Uganda would benefit from using the PIN and the CPR, both in saving costs for keeping their own registers and ID numbers and in improved efficiency. The main users would be:
- Registers of enterprises, companies and businesses
- Land and Titles Register
- Registrar of Birth and Death
- Electoral Commission
- Uganda Revenue Authority
- Public Service Commission
- Driver's licence authority
- Passport office
- Police and courts
- UPDF
- Uganda Electricity Board
- Water utilities
- Telephone companies
- Health care institutions - public and private
- Educational institutions - public and private
- Local administration
- Banks
- Insurance companies
- Private employers
- Uganda Bureau of Statistics (UBOS)

1.4   Registration of births and deaths to update the CPR

The Ministry of Finance, with UBOS as the implementing body, launched the revitalization of birth and death registration after the Census in September 2002 as a mechanism to officially record births and deaths, and to collect, transmit and store the data and guarantee their quality and integrity. The current registration system is a result of collaboration between the Government and UNICEF. UNICEF has done pioneering pilot work on this in Uganda and in many other countries, as a means of protecting the rights of children.[3]

Apparently, LC I chairpersons notify to parish chiefs about any death or birth that occurs in their areas of designation. The parish chief (LC II), who is a civil servant, is the person doing the births and death registration work (registration clerk). The sub county chief (LC III) on the other hand, who is also a civil servant, is in charge of collecting the birth and death reports from the parish chiefs, and to prepare and distribute short birth certificates and death certificates to the respective owners through the parish chief. The birth and death information is sent from the sub county chief to the district administration, where it is computerised and forwarded quarterly to UBOS. The district also sends a copy of the certificate to the Registrar General who is responsible for issuing the long birth and death certificates to persons requesting them.

It has been proposed that the LC I chairpersons should in the future also do the birth and death registration. However this proposal is still awaiting approval and possible changes in the legal requirements for this are being looked into.

---

[3] The Convention of the Rights of Children specifically states that every child has the right to have a name, identity and acquire a nationality (Article 7).

Registration of vital events may in principle be done in different ways, the most common being:

i) Births and deaths are registered by the institution where the event takes place. This may be the most reliable method, but in Uganda only a fraction of all births and deaths take place in hospitals and other health institutions.

ii) Officials or volunteers visit households in the community, as in the current UNICEF BDR system. This is labour-intensive and sustainability is not guaranteed.

iii) People themselves report births or deaths in their households to the LC I chairperson or parish chief. This is a less expensive system but it faces the challenge of lack of sensitisation, requiring special awareness campaigns to increase registration.

There are several weaknesses of the present BDR system as a source for updating a CPR:

Births: Births are only likely to be reported if people are given birth certificates soon after the registration. In Arua, for example, we were told that for a while there was a shortage of birth certificates, which made people lose interest in registering births.

Deaths: Today there are few incentives for reporting deaths and few people need death certificates. If a death certificate were required for burials, registration would probably increase, but in this case the certificate would have to be issued immediately after the death.

Moves: The most serious problem of the BDR is that moves and migrations are not registered at all. Registering moves is important if the CPR is going to be used for local administration and planning. Moves could either be registered through visits to the households in the community, as in the Household Registration system (see section 1.5.3 below). Another method is voluntary reporting, as in (iii) above, but we doubt the efficiency of this. A third method could be that people who have moved report their move to the parish or sub county chief in the *new* place of residence. This is more likely to happen if the rights to schooling and health etc. were contingent on being registered. Information about the move could be sent to the district, where it is computerised, forwarded for updating to the CPR, which could then send a notification to the area the person moved *from*.

We conclude that the advantages of Birth and Death Registration for updating the CPR are:
- The system has been established and is being implemented all over Uganda.
- It can be integrated into the system for assigning ID numbers to new births.

The main problems with the BDR in this connection are:
- Migrations/moves are not reported.
- There are few incitements for people to report deaths and migrations/moves.
- The current system may not be sustainable since it is based on the use of volunteers.
- Computerisation of the data has started in only one or two districts.

We suggest the following studies:
- How to integrate the assigning of ID numbers to new births into the existing system of birth registration.
- How to integrate reporting of migration into the existing system of birth and death registration.
- How to make incentives to report death and migration.

These studies may be done in about one week by two consultants.

1.5   Establishing the initial population of the CPR
The possible sources of data for establishing a central population register for Uganda are:
- Population Census 2002 (section 1.5.1)
- Electoral Register (section 1.5.2)
- Community household registers (section 1.5.3)
- Using the 2002 census to create community household lists (section 1.5.4)
- New population census (section 1.5.5)

Birth and death registration may in principle also be used to establish the initial population of the CPR. It would, however, take a very long time (70-80 years!) before the CPR would include most of the total population if it were based on registration of new births only. But if older children and adults were also registered, e.g. in connection with the issuing of birth certificate or ID cards, the build-up period could be much shorter.

We will discuss the merits and drawbacks of each source below. When considering these we need to bear in mind the following principles:

- *Legality*: Establishing and updating the register cannot be against the law. Appropriate acts may need to be proposed and accepted by Parliament.
- *Coverage*: The register should cover the total population (or as close to that as possible).
- *Identity number*: It must be feasible to assign personal identity numbers to the register population and also to assign the PIN to births and deaths reported to the register such that the updating can be done.
- *Uniqueness*: It should not be possible to register the same person twice or more, neither through a deficiency of the system nor by people who for criminal or other reasons would like to have several identities. Moreover, the same PIN should not be assigned to different persons.
- *Updating*: It must be possible to update the register regularly with individual data on births and deaths, and preferably also with data on internal and external migrations.
- *Address*: It should be possible to locate where the registered individuals live, i.e. by village or street address. This is necessary both for finding individuals and for producing regional population statistics.
- *Simplicity*: The register should be as simple to establish and update as possible. The need for experts should be minimised, especially at the local level.
- *Costs*: The costs to update and use as the register should be as low as possible.
- *Institutional framework*: Existing local and central institutions should be used if appropriate. If necessary new institutions may have to be established.
- *Sustainability*: The running of the register of a sufficiently high quality should in the long run not depend on foreign funding or technical assistance. It should also not depend on special campaigns and initiatives of limited duration and effect.

Finally, we would like to emphasise the fact that it will take a long time to obtain a high-quality register. Some of the benefits mentioned in this report can be achieved soon, where as other may take several years.

Table 1 summarises some characteristics of possible data sources for establishing a CPR, with regard to the feasibility etc. of using each data source.

Table 1. Characteristics of possible sources for establishing a CPR

	Census 2002	Electoral Register	Birth Registration	Community HH register	New Census
Against existing legislation?	Yes (?)	Yes (?)	No	No	No
Coverage	Almost complete	About 2/3 of citizens 18+	Will gradually become complete	Almost complete if implemented	Almost complete
Same person different PINs?	No	No? Some duplicates exist	No	No	No
Different persons same PIN?	No?	No	No	No	No
Updating	Difficult but not impossible	Difficult	Relatively simple	Relatively simple	Relatively simple
Assigning and using PIN	Difficult but not impossible	Difficult	Relatively simple	Relatively simple	Relatively simple
Address	Village, street/plot	Village?	Village, street/plot	Village, street/plot	Village, street/plot
Existence of local structure?	No?	No?	Yes	Yes	?
Existence of central structure?	Yes	Yes	Yes	Yes	?
Simplicity to establish	Simple	Complicated, part of pop. missing	Reasonable	Reasonable	Simple
Simplicity to update	Somewhat complicated	Complicated	Simple	Simple	Simple
Costs of establishing	Low	Low	Reasonable	Reasonable	High
Costs of updating	High?	High?	Reasonable	Reasonable	Reasonable
Sustainability	Quite good	Questionable	Quite good	Fairly good but some problems	Reasonable

1.5.1 Population Census 2002

The 2002 Population and Housing Census recorded information about all inhabitants who spent the census night, September 12/13 2002, in Uganda. The census contains much more information than what is required for identifying a person. For establishing a CPR we would only need the answers to questions P1 (name), P2 (relationship to head of household), P3 (sex), P4 (date of birth), and perhaps also P5 (age), and P10 (place of birth), in addition to information about village, parish, sub-county and district, and if available, street and plot number in urban areas. Citizenship (P7) will be required if the CPR is going to be used to make voters' list and to issue passports.

The advantage of using the census to establish the CPR is that it has a complete, or almost complete, coverage of the population. There are, nevertheless, several problems, such as questionable quality of some of the data, in particular the information on names, date of birth, and address.

The most serious problem about using the census is, however, its relation to the Statistics Act of 1998. The information in the census is collected on the basis of Articles 14-16. Furthermore, Article 19(1) of the Act says that

(1) Except for the purpose of a prosecution under this Act -
…
(c) "no report, abstract or document, containing particulars contained in any such return or answer and so arranged as to render possible identification of those particulars with any person, business or undertaking; and

(d) no data set or part thereof stored in a computer or any other electronic media;
shall be published, admitted in evidence, or shown to any person not employed in the execution of a duty under this Act ..."

A rigorous interpretation of this Article means that even the identifying information (identifiers) may not be transmitted into a CPR used for other purposes than statistics. Specialists on Ugandan law need to consider a new CPR act, defining identifiers such as name, date of birth and village, which may be transferred to the CPR from all official sources, without regard to other acts. If that is possible, the census may be a source for the CPR.

When the data entry of the census questionnaires is completed at the end of 2003(?) it will be technically possible to select the identifiers needed to establish an administrative CPR. The reference date of this register would be 13 September 2002. Births and deaths since that date are registered for most of the country and may in principle be used to update a census-based CPR.

Matching deaths and parents of newborn children with the records in a census-based CPR is a non-trivial task, however, as long as the same identifiers are not used *both* by the CPR and the birth and death registration. This matching would have to be based on name, date of birth, and locality (LC I). The matching would be exceedingly difficult for people who have moved from the place they were enumerated, have had a child, or have died, as name and date of birth are usually not sufficient information for obtaining unique matches.

Cases that cannot be matched automatically by the computer would have to be matched manually. CPR employees would have to search for likely matches among persons with similar names, dates of birth, and place of residence. This would be very time-consuming and costly if it has to be done for a large number of cases. A pilot study would be required to ascertain the problems and costs of doing this.

To conclude: The great advantage of using the census to establish the CPR is that
- It covers all of the population.
- It includes most of the necessary data.
- The data have already been collected.
- The data will soon be available electronically.

There are, however, also several problems in using the census, the most important being:
- The Statistics Act does not appear to allow the use of Census data for this purpose, but this needs to be investigated further.
- Matching deaths and the parents of new births with the CPR may be complicated, costly and time-consuming.
- There is very limited information about parenthood in the census.
- Some of the data necessary for the CPR may be of poor quality.
- There is no information on people's movements from one locality to another.

The Team proposes that the following studies be carried out, if the legal questions mentioned above are solved:
- How to update the demographic information in the Census that refers to the night between 12 and 13 September 2002. Sources, methods for using them, and in what degree they may cover this task, may be the main topics of the study.
- How to get information on parenthood for persons without this information.
- How to check the quality of identifiers and other demographic information from the Census and other sources.

Consultants from Statistics Norway could contribute to this. We estimate that to study these items two consultants would need one week in Uganda, given that they will be having admission to data sources and informed people.

1.5.2 Electoral Register

The basis for the Electoral Register is the right for Ugandan citizens 18 years or older to vote. According to the Electoral Commission Act this requires registration, which is done during a period prior to the election. When a person has registered it should, at least in principle, not be necessary to register again for subsequent elections. Only new generations of voters and immigrants with Ugandan citizenship need to register for the next election.

The current computerised Register, which was recently re-established from scratch with new registrations, includes about 8.2 million people. According to preliminary results from the 2002 Census there are about 12 million persons 18 years and above in Uganda, implying that the Register may be missing more than 4 million persons.

The technical organisation of the Electoral Register seems to be well taken care of by the Electoral Commission. Based on the Register, the Commission is in the process of producing laminated Voter's cards with fingerprints, photo and an identification number for every registered person. Based on the photos and other information on the card, and special software, the Commission has identified a number of duplicate registrations but an unknown number probably remains.

In spite of the use of advanced technology there are several problems with the new Electoral Register:
- Many people have not registered to vote for reasons such as lack of interest or knowledge about the registration, physical inability to register and living in remote areas, implying that the Electoral Register does not contain all Ugandans entitled to vote.
- There is no updating of the Register for people who have died or emigrated, implying that the Electoral Register will over time include an increasing number of people who are not eligible to vote. This makes it impossible to calculate the proportion of eligible voters who vote in an election.
- People may be registered more than once although most of such cases are probably detected by the sophisticated methodology.
- Movements within the country may be a problem for local elections.
- Because of supplementary elections to the Parliament, the Electoral Register needs to be updated at irregular intervals and not only prior to the ordinary elections every five years. Thus, there has to be more or less continuous updating of the Register, which would be very costly and complicated without a link to a CPR.

The information in the Electoral Register is protected by the Electoral Act, that prevents the use of such information for purposes other than elections. Thus, it appears to be against the law to use the Register as a basis for a CPR. There may also be political problems: If people learn that information about them is used to collect taxes they may become unwilling to register to vote. This could have serious implication for the development of democracy in Uganda.

The Electoral Register would benefit greatly from collaborating with other registers, assuming that the necessary legislative changes have been made with respect to both the Electoral Register and other registers, such as the CPR and the Register of taxpayers.

To conclude: The great advantages of using the Electoral Register to establish the CPR are that
- The data have already been collected.
- The data have been computerised.
- Identity numbers, both a serial number and a number based on polling station and the place of origin(?), have been assigned to everybody in the Register.
- High-quality identity cards are being issued, including ID number, finger print and photograph.

There are, however, several problems using the Electoral Register to establish a CPR, some being the same as for the census, the most important being:
- It covers only a part of the population, currently about 1/3.
- In particular, persons below 18 are not included.
- The Electoral Act may not allow such use of the Register.

- The Register lacks information about household, parenthood, and current place of residence (?).
- Matching births and deaths with the CPR may be complicated, costly and time-consuming, probably much more so than for the census.
- There may be several individuals with multiple registrations.
- The Register is not updated for births, deaths and migrations.
- There will necessarily be a time lag between the registration and the establishment of the CPR. During this period many people will be born or die without a consequent updating of the CPR.

We suggest that the following studies be accomplished if the legal problems are solved:
- How to use the Population Census and the Electoral register to find out the statistical significance of persons missing from the registers, for each local unit.
- How to combine the collection of data in the Electoral register and CPR.

These studies may be produced in one or two weeks by two consultants.

1.5.3 Community household registration

At the same time as the revitalization of the births and deaths registration started, the registration was extended by community household registration. This approach is being used in the about 20 districts that are receiving financial assistance from UNICEF. Birth and death registration in the other 36 districts is currently not including the community household registration. The registration is done by volunteers, called PDCs (from Parish Development Committee).

In addition to information on District (LC V), Sub-County (LC III), Parish (LC II) and Village (LC I), the Household Register Book (HRB) includes for each household member data on name, relationship with head of household, sex, date of birth, place of birth, orphan under 18 years, date and cause of death. From what we have seen in the field this information seems quite reliable. However, some items like age and order of writing names need to be further improved upon and captured for everybody.

The Household Register Books are carried to the sub-county, which forwards copies of the pages to the district administration, where the data are computerised. Changes in the household structure due to births, deaths and migrations are recorded every quarter by the volunteers in a special household registration update forms, which is also forwarded to the sub county.

There appears to be considerable duplication in the system since the household registration update form contains much of the same information as in the birth and death registration forms. Compared to these the information obtained through the update form is mainly about migration into and out of the household. These could be recorded in an amended household registration update form, or a special migration form could be introduced. The dates for moves into and out of the household should also be recorded.

The household registration is a kind of local census. If it is updated with information on births, deaths and migrations, the household register book would, in fact, be a local population register. The quality of it would depend on the diligence of the volunteers.

The household registration has proven to be of great value in the where it has been introduced, and at all administrative levels. There is considerable appreciation of the usefulness of the lists and how important it is to know the total population as well as the numbers in various age groups. At the district level the household registration will be very useful when the data have been computerised. This seems to be progressing well in the pilot district of Arua.

The problem is that household registration has just started. It has not been given a high priority in the development of the system for registration of births and deaths. If household registration is going to be the data source for the CPR in the near future, use of the various books needs to be implemented all over the country as soon as possible. A timetable for the joint household registration book and birth, death and migration registration for the whole country, should be made. Moreover, the books and forms need some amendment.

There are also other problems with the household registration. The first is the feasibility of expanding it to the whole country. UNICEF has been instrumental in mobilising, training, supervising, funding and providing supplies to the pilot districts. UNICEF does not, however, have the capacity to this for all of Uganda. Thus the Government would have to play a very active role in this, with assistance from UNICEF and others.

The other problem is the sustainability of the household registration. It is now done by unpaid volunteers. Some of them have been given bicycles and they occasionally get a free meal during training, but this is probably not enough to keep them working for an extended period. The sub-counties should give them some minimal rewards. The budget for national expansion of the system should include some expenditure for this, for example for bicycles, which are highly valued.

1.5.4 Use of the 2002 census to create community household lists

As mentioned in 1.5.1 the Population Census 2002 has all the identifying variables we need to establish a CPR, but there are legal problems with doing that. A possible alternative could, however, be to produce household lists from the census, including PINs assigned automatically by UBOS in advance, and distribute these to the parishes or villages. On request of UBOS the parish chief could hire locally trusted people to contact each head of household, who should be asked if he/she accepts that the household information in the census is transferred to the CPR. He/she should also be asked if the information is correct and if any corrections should be made.

This procedure would probably not be against the Statistics Act, as permission is given by the heads of household to use the census data in an administrative register. The census data would be used to make the data collection more efficient and no information about the household would be given to anybody not authorized by UBOS. The legal and the practical conditions for this would have to be investigated. This procedure would save substantial costs in digitising the census data.

The advantages of using the census to produce household lists are that:
- There does not appear to be any legislation against it.
- It is relatively simple to introduce and use identity numbers, which can be assigned and disseminated at central level when the Household registration book is established, and at local level (sub-county) for the birth registration.
- Updating the CPR with data on births, deaths and migration is simple.
- The data are of great use to local communities, at all levels.

There are however, several problems using this method, the most important being:
- Although there do not seem to be any serious legal obstacles, the legal issues need to be studied.
- It may be complicated to administer the printing of household lists from the census and the distribution of them to villages and other LC I areas all over the country.
- The household heads may be temporarily absent and some of them may object to the use of the census data.

We suggest following studies:
- How household lists from the census may be produced and distributed in a safe and efficient way.
- How identity number may be introduced, assigned and distributed during this process.
- How the local population register may be produced, distributed and used by local authorities.

These studies may be done in about one week by two consultants.

1.5.5 New population census

Only if the alternatives listed above in sections 1.5.1-1.5.4 are ruled out because they are considered to be against the law, too costly or too complicated, should a new census be considered as the main source for establishing the CPR. In such a case a special census law would need to be adopted that would allow for a limited amount of information for each individual (identifiers) to be used for non-statistical purposes.

A new census would, however, be costly and it would take several years before it could be conducted and processed. A special and simplified census, designed only to collect the data required to establish the CPR, could be taken sooner, but it would still be very costly. The advantage of basing the CPR on a new census is, of course, that it could focus on the CPR needs.

Finally, the basis for the CPR could be the next ordinary census, which will probably be taken in 2011 or 2012, with appropriate legislation This would delay the creation of the CPR considerably, but in the meantime the registration of births, deaths and migrations could be fully implemented and improved.

We suggest the following study:
- How to take a new population census as a basis for a Central Population Register in the most effective way.

This study may be done in three or four days by two consultants.

1.6 Design and assignment of the ID number

A unique, universal and numerical personal identification number (PIN) is absolutely essential for running and using a Central Population Register. Introduction of this has many advantages:

- A unique number makes it easier for an individual and for society to ensure that the identity of a particular person is not mixed up with other people's identities.
- Comparing and matching personal records from different sources becomes much simpler, whether computerised or not. An example of this is the linking of births and deaths to the CPR.
- Detection and elimination of duplicate entries of records for the same person is greatly facilitated.
- Detection of fraudulent birth certificates and other personal documents is made easier.

The PIN should be authorised by the Government as the only legal ID number to be used in Uganda by public institutions.[4] The private sector should also be encouraged to use the number. A special Personal Identification Number Act may be considered.

Special attention should be given to the design and assignment of the PIN. There are two different principles for PIN numbers:
- The PIN can contain information such as date of birth, sex and place of birth. This is the case in the Nordic countries and in the republics of the former Yugoslavia. The disadvantage of this is that the number for a given person number has to be changed if it is later found that the date of birth, for example, is wrong. On the other hand, numbers containing meaningful information are easier to remember and errors may be more easily detected.
- The PIN can be a purely sequential number. This is now the recommended principle.

A sequential number needs to be assigned centrally, for example by pre-printing the numbers on birth registration forms that are distributed nationwide. It is also possible to distribute batches of sequential numbers to regional levels for assignment there, but this can easily lead to errors whereby two different people are assigned the same number. In Uganda the Electoral Commission has assigned a sequential number to everybody who has registered. However, on the election cards issued by the Commission there is also a nine-digit (?) number showing the polling station where the bearer has the right to vote (?). If the Census is to be the source for the CPR it would be possible to assign a sequential number centrally, but as discussed above, it may be difficult to match births and deaths with the CPR on the basis of such numbers.

---

[4] The Social Security Stakeholder Transition Group (STG) has recently announced that it will present its report in April 2003. In the announcement it is also mentioned that it will "*(ii) Carry out a study for the introduction of a Social Security National Identification Number (NIN) which will be the primary identification for every Ugandan and make implementation proposals for the most cost effective and efficient approach to this exercise. The Social Security Number will be integrated with the registers of births, marriages and deaths as well as the database of the Uganda Revenue authority.*" Supplement, p. 27, *The New Vision*, March 26, 2003.

Another concern is that the PIN should be as short as possible, to minimise the costs of data entry and the risk of making errors, and to save computer space, although this has become less important. Nowadays a PIN may exist of both digits and letters. This has the advantage that the number is short and easy to remember. (With the numerals 1-9 and the 25 letters A-Z one alphanumeric character can cover up to 34 units.) A PIN should include at least one check digit, which is used to check that a number is valid, to detect typing errors and attempts at fraud. [5]

The Team thinks that if the 2002 Census may not be used for legal or other reasons, community household registration may be the best solution for establishing and running a CPR. In this case the PIN could be assigned and made known to the people at a low administrative level. This would ensure local ownership and control and proximity to the users.

We are proposing the following PIN system for discussion, with is a mixture of numerals and letters, to minimise the length and facilitate memory:
- Characters 1-2: District (LC V) (01,02,…,56)
- Character 3: Sub-County (LC III) (1,2,…)
- Character 4: Parish (LC II) (1,2,…)
- Character 5: Village (LC I) (1,2,…)
- Characters 6-8: Household number (001, 002,…)
- Characters 9-10: Number in household (or perhaps only one alphanumerical character) (01,02,…)
- Characters 11-12: Year of registration (03,04,…)
- Character 13: Check digit

If there are more than 34 sub-counties in any district, more than 34 parishes in any sub-county and more than 34 village in any parish, two characters would have to be used. Since new households will be formed continuously the household number would after some years exceed 999 in many villages (numbers of extinct households should not be reused). To overcome this problem the year of registration has been added (two digits).

An example of a PIN according to this structure (with arbitrarily chosen characters) would be
48CAD0010203x, where

48 = Arua District
C = Aiivu Sub-County
A = Edanya/Paranga Parish
D = Omvuko Village
001 = number in household registration book
02 = number in household
03 = year of registration
x = check digit (not yet determined)

Note that the digit 0 (zero) should not be used as a code for any regional unit or for the check digit, as zeros are easily confused with blanks (missing values).

The Team has learned that UBOS has established numerical codes for all administrative units in Uganda, with 3 digits for district, 1 for county, 2 for sub-county, 2 for parish, and 2 for village, totalling 10 for the regional component, whereas our regional components has only 5 characters. It may nevertheless be ad-

---

[5] Most countries with unique ID numbers have one check digit (Denmark, Sweden and the former Yugoslavia) or two check digits (Norway). Different algorithms exist for this, for example modulus 11, but other alternatives exist. The modulus 11 check digit is computed as follows: Each of the first digits is multiplied by a given number, the sum of the products is divided by 11, and the remainder is subtracted from 11, which yields the check digit. According to the Modulus 11 algorithm used in Denmark the first nine digits of the PIN are multiplied with weights 4, 3, 2, 7, 6, 5, 4, 3 and 2, respectively. For a PIN with first nine digits 030636117, the sum of products is $0*4 + 3*3 + 0*2 + 6*6 + 3*6 + 6*5 + 1*4 + 1*3 + 7*2 = 120$. 120/11= 10 with a remainder of 10. The check digit is found by subtracting the remainder from 11, i.e., 11-10 = 1. Thus, the full PIN is 0306361171.

vantageous to use the official codes as they may be well known to officers and after some time perhaps also to the public.

The same system for assigning PINs to the existing population should be used for births. Thus, a birth would have to be entered into the household register book at the same time as it is entered into the BR book. (Some time in the future this could perhaps be reduced to one entry.)

The current system of birth registration is based on a nationally unique 8-digit code for each page in the birth registration book, plus one digit for the number on the page (1…8), plus two digits for year of birth (and also two digits for the month?). This makes 11 (or 13?) digits plus one check digit, totally 12 (or 14) digits. This birth number is of about the same length as we are proposing but it is based on a different system. Moreover, it as a time-consuming task to stamp every page in every BR book with a unique serial number. (Numbering the BR book for each village, parish or sub-county would be easier.)

The PIN should be entered into all documents and books, such as the household registration book, the birth registration book and the death registration book, and also in the updates of these books.

The proposed system has the advantage that the PIN would be known immediately to the villagers doing the registration, the people themselves, and to the sub-county officials issuing the short birth certificates. The only exception to this is the last character, the check digit. This is too complicated to be determined manually (although this is possible) and would have to be calculated when the household registers and births are computerised at the district level. The full PIN, including the check digit, should, however, be printed on the long birth certificate and also on any ID card.

The proposed PIN is linked very closely to the community birth register. This makes it feasible to check that the information on a birth certificate is correct, by looking up the corresponding birth register book. Verification of ID numbers may be required for legal and other purposes.

The PIN number should stay with a person for the rest of his or her life, regardless of whether he/she moves elsewhere. Consequently, many people will have a PIN that does not correspond with where they currently live, only where they lived when they were registered.

It could perhaps be argued that this type of ID number would reveal where a person is or was registered for the first time, for somebody who knows all the codes, but we do not see how this information could be misused. This issue should be considered, however.

1.7   Addresses

An "Address" is defined as the name or number of a specific plot, place or area. An address system is needed for many purposes and it is particularly important in census and population registration. Persons and households are related to addresses, which is the location where they live / the place of residence.

Addresses are also widely used for distribution of services and navigation purposes. A map with proper street names and block numbers is required to find a place in an unknown area. There must be signs with street names and block numbers that are visible on the buildings. In rural areas place names play a similar role.

The lack of a proper address system in Uganda is highly visible. Street names and house numbers occur only in the most central parts of major cities. This makes it difficult to trace people and enterprises. Their physical location is unknown and they cannot be found without an address.

In developed Land Information Systems the address is one of the most important keys, which should be included in all major basic national registers, like the Land and Title Register, The Cadastre, the Central Population Register and the Business Register.

The address should be standardised and administered by one authorised body. It must be unique in a countrywide context. In urban areas the address could be city name/street name/plot number. In rural areas the address could be district/sub-county/parish/village. These administrative units should also have a digital representation for computer use, which is a unique (alpha-) numerical code.

The address may be geo-coded, for example by the centroid co-ordinate of the parcel or the village. This opens up the possibility of using modern GIS-based techniques in the census, population statistics, address map production, etc.

An address may be altered, for example when a street is given a new name. This causes problems for the users of the addresses, who should be informed about the change in a standardised way. For this and other reasons *one* institution should be given the responsibility of administering addresses in Uganda. In most countries this is the responsibility of the local government. In Uganda, the cities and sub-counties could be authorised to do this. In Uganda UBOS should also contribute, since it is defining codes for all administrative areas.

The Team recommends the consideration of a law for address and address administration, or inclusion of such legislation in existing laws. Important elements of this law would be:
- Institution in charge of address administration.
- Definitions of different kinds of addresses.
- Rules for establishment and change of addresses.
- Rules for assigning addresses in developed areas.
- Rules for putting up address signs on streets, rural roads, buildings, etc.
- Rules for information and contact with the public.
- Rules for spelling of place names.
- Rules for establishment and maintenance of an address database.
- Contents of address database.

1.8   Conclusions and legal, institutional and economic implications of establishing a CPR

Based on the information about each of the possible sources and the feasibility of using them to establish and updating a CPR, the Team concludes that the best way to establish a CPR would be to use the 2002 Population and Housing Census, if legally possible, or the household registration book, and to regularly update the information in the CPR with information from the registration of births, deaths and migrations. The choice of data source for establishing the CPR can only be made after consideration of legal issues and completion of several preliminary projects and pilot studies.

Based on the preferred solution a Central Population Register Act would have to be drafted and approved. It will probably also be necessary to amend other laws, such as legislation on election registration, tax-paying, driver license, statistics, and birth and death registration. The Act on birth and death registration should be amended to cover the registration of migration. This Act could possibly be integrated into the new CPR Act.

This register should be the only authorised register of the Ugandan population. All other official registers should be based on the CPR, and all of them should share their identifying information with the CPR. The CPR should also be open for use by private institutions such as banks, insurance companies and educational facilities. Everybody living in Uganda should be obliged to give the necessary information to the CPR. The Ugandan society will provide rights and privileges, as well as require obligations from, only to persons registered in the CPR.

As a body legally responsible for registration of births and deaths, it would seem logical to let the Registrar General's Department under the Ministry of Justice also be responsible for the CPR. The registration activities will, however, be done by local administrative units (LC I – LC V) under the Ministry of Local Government. To run a CPR of more than 24 million persons is a comprehensive job that would need extensive expertise and experience in handling large quantities of data. Based on what we have seen, only two institutions in Uganda may be capable of doing this job today, the Uganda Bureau of Statistics, and

the Electoral Commission. Of these UBOS seems to be the most experienced. We propose, therefore, that the Registrar General make an agreement with UBOS on technical collaboration about the CPR. Alternatively, the competence of UBOS may be extended so that they have total responsibility for the register, but in close cooperation with the Registrar General.

Alternatively, an independent CPR agency could be established, with close collaboration with other Government institutions. There would probably be a need for an agreement between the institution responsible for the CPR and the Ministry on Local Government on the responsibilities of each administrative level in the collection and reporting of information to the CPR.

Finally, we would like to make some remarks on the costs of establishing and running the CPR in addition to the costs that are already implied in the existing registration routines. To establish the CPR based on the information in the household registration book means that most of the information in these books would have to be computerised, as is currently done in the districts of Arua and Busia. We have unfortunately not been able to estimate the costs of this. If the Population Census may be used to establish the CPR, the cost would be reduced significantly, depending on the way the census information would be used. To extend birth and death registration with registration of migration would lead to only minor additional costs if it is done in an efficient way. Registration and computerisation of household data, if necessary, would be a limited project that may be partially financed by international donors.

2 Business and enterprise registers

A business register is a list of economic units. An *economic unit* is defined in the National Accounts as an institution that provides production and employment. A *business unit* means all kinds of economic units. In administrative registers and procedures the economic unit is denoted a *legal unit* or *enterprise*. The term *establishment* is a statistical concept. An establishment is the unit of statistical surveys on production and employment. Some enterprises are divided into two or more establishments. When a business register covers the government sector, the government sector is "profiled" (or divided) into units similar to the private sector concepts of enterprise and establishment.

An administrative business register is used in administrative procedures for government and private sector. A statistical business register may serve as a sampling frame for business surveys.

This section discusses the development of
- The statistical business register (BR) in Uganda Bureau of Statistics (UBOS), where the Business Census 2002 represents the initial situation of the BR.
- Business registers in Registrar General Department (RGD) of Ministry of Justice and Constitutional Affairs.
- Business registers in Uganda Revenue Authority (URA).
- Municipal trading license registers.

The development of similar Norwegian registers is described in Appendix 4.

2.1 Introduction

The starting point for developing Ugandan business registers is the existing administrative business registers and the statistical Business Census 2002. The population of these registers is economic units in the *formal sector*. To develop the Business Census into a statistical Business Register, UBOS needs information about new businesses that have started after the reference date of the Census. The idea is that information about new units should be collected from the administrative business registers. It is important to develop indicators that provide information about when a registered business unit is no more economically active.

The main challenge related to the operation of the existing Ugandan administrative business registers is to ensure that all registers have a complete coverage of the population of economic units that is of interest. One important measure to improve the coverage of the business population is to co-ordinate the efforts of each of the registers in the development of efficient procedures for updating the registers, i.e. to catch new units and classify registered unit as non-active.

A business register needs to identify the natural persons that are related to a business unit, e.g. the director of a limited company or the owner of a family business. The identification of a person that is responsible for a business unit, should be identified by an official PIN (Person Identification Number), and specified as a variable in the business register to ensure reliable identification.

2.2 Formal and informal sector

For the statistical system of Uganda (and other African countries) it would be useful to define the formal and informal sector in accordance with the recommendations of ILO (International Labour Organisation). According to ILO businesses of the formal sector are defined as economically active units that are registered in one of the administrative business registers or in the statistical BR. The informal sector covers subsistence agriculture and other economically active units that are not registered in any business registers. The informal sector units are usually self-employed with very low income. They also survive in urban areas but are not in a position to pay taxes. Some active economic businesses are not registered properly in administrative registers to evade paying taxes. Such units could be classified as the black market sector.

ILO estimates that the Ugandan labour market (or labour force) consists of 10 million people, of which the government sector accounts for 170 000, the private formal sector 600 000, the private informal sector 5 million, and unemployed and underemployed 4 million. The statistical Business Census covers 161 000 businesses or establishments in the private formal sector, with an employment of 444 000.

The annual number of entrants into the labour force is estimated at 340 000. Formal sector employment is clearly not able to keep pace with the increasing labour force. This means that the informal sector is the largest employer in Uganda and the sector that in the short and medium term will have to create jobs for the majority of the population.

2.3 Developing the statistical Business Census into a statistical Business Register

The main objective of a statistical Business Register (BR) in UBOS is to serve as the sampling frame for statistical business surveys. The point of departure for the BR is the Business Census carried out from February 2001 to October 2002. (UBOS uses the term Business Register for the Census micro file).

To serve as a sampling frame the BR needs to be updated. New units that have started an economic activity after the reference date of the business census must be covered. It is important to study if the registration of new units in administrative business registers may be a reliable source for updating the BR. It would be useful to develop methods to get information on how well the Business Census, and later a BR, cover the formal sector.

A project aiming at developing a linked file of all administrative and statistical business registers is presented below. In the short term this would be a tool for updating the statistical BR. Later this linked file should be the starting point for a common Legal Unit Register.

The Business Census covers large units in the agricultural sector, but not subsistence agriculture and also not the government sector. Employer units of the government sector are covered in administrative registers.

The economic activity of establishments and enterprises is classified by UBOS and coded according to the international standard of United Nations (ISIC)

2.4 Administrative business registers of the Registrar General Department

The Registrar General Department (RGD) operates several business registers, including:
- Registry of limited liability companies.
- Registry of business names of non-limited companies.
- Registry of foreign companies.

All business units that are registered in the company registers at RGD need a Certificate of Registration. Certificates are needed in calls for tender and sometimes this fact is the background for registering a company. If the company does not win the tender the company might not initiate any economic activity at all.

The objective of the company registers is to be a component of a commercial justice system to promote development of the private formal sector by improving the general legal environment. When a new company applies for registration it is controlled/checked that the name of the company is not already registered and in use. The variables that are specified in the computerised file are limited to information that is needed to check if the proposed name of a new company is already registered or not, i.e. name of company, date of registration and ID number of company. Some companies report their revenue to the register, but most registered companies do not send annual reports, as they are supposed to do according to the Company Register Act. The information of the company registers is public.

A unit in the Company Register has information on one or more persons, such as the owner and the executive director. The RGD would consider it a great improvement to be able to identify persons that are

related to a company by a unique and public personal ID number (PIN), and that the PIN is specified on a national ID card for all adults.

At the moment the legal obligation to report annual company accounts is not implemented as a current practice for all companies, not even for limited companies.

The RGD would like to be the operator of an administrative Legal Unit Register, see below.

A substantial number of registered companies is inactive (paper units only). Measures to develop the company registers would be:
- Developing procedures that could ensure that all active companies are registered.
- Registered companies that are not active should be classified as such.
- An amended Company Act is needed.
- The rules on reporting company accounts should be implemented.

2.5   Administrative business registers of Uganda Revenue Authority

The Uganda Revenue Authority (URA), operates four business registers that are central in a Ugandan system of business registers:
- Tax Identification Number Register (TIN)
- Pay as you Earn List (PEL)
- Taxpayers List (TL)
- Value Added Tax Register (VAT)

Other registers of URA are Motor Vehicles Register, Driver's Licence Register, Professional Registers, (e.g. of lawyers), and Landlord Register (yet to be developed)

The main problem related to operating the business registers of URA is that companies, persons and households try to evade paying tax by not registering. Another evasion method is to register but to report only parts of turnover and wages. Methods to develop a more fair and efficient system of taxation are needed. The infrastructure available to URA to identify companies, persons and households in the work place and residence is weak.

Important measures to improve the existing Ugandan system of business registers could be the establishment of a Central Population Register, the use of a unique and official PIN in administrative procedures of the public and private sectors, and the obligation to use a national ID card to ensure a reliable identification of persons.

2.5.1   Tax Identification Number Register

The Tax Identification Number (TIN) exercise was started with the aim of collecting taxes, which have for a long time been evaded by some categories of taxpayers. This exercise is aimed at laying a foundation for establishing an electronic database for planning and monitoring, administering and regularising most tax collection activities. The TIN acts as an account number for both individuals (natural persons) and business units and is related to inspection, assessments, payments, verifications and "station" (URA local office) performance.

The TIN database is set up to have a common identification number for the units of all registers of URA. When a new unit is registered in the TIN Register, the Certificate of Registration of the company registers of RGD is one of the required documents. The company number is registered as a variable in TIN. The TIN has the same function for the registers of URA as a common Legal Unit Register would have for all Ugandan business registers. Although the policy is to issue all taxpayers with a TIN, the TIN is superseded by the Income Tax File Number "*as the identifying mark for taxpayers*".

One of the intentions of TIN is that it should be utilised by all government agencies. The primary departments in this respect were to be the local authorities engaged in collecting graduated taxes and trading license fees. The district offices of the Internal Revenue Department of URA handle all TIN applications.

Status of the TIN Register per 1998:

Master Register	161 200
Active units	99 800
Companies	13 200
Individuals	86 600

2.5.2   Pay as you Earn List

This is a register of employers that pay taxes from the wages of their employees. It includes units in the Government sector.

At the moment there is no reporting on individual employees or units. In administrative data systems on jobs, two ID numbers are needed to identify the job unit: the PIN of the employee and the BIN of the employer. When the infrastructure of basic registers and unique ID numbers, PIN and BIN, are established, the reporting of employee and self-employed jobs would be a very important source for administrative and statistical purposes related to income, wages and social security data.

2.5.3   Taxpayers' List

This is a register of persons and companies that pay income tax. The URA considers this register to be very unreliable. The number of individual taxpayers is approximately 150 000.

2.5.4   Value Added Tax

This register covers units that are obliged to pay VAT. Any business with income greater than a specified level should pay VAT. Currently there are about 3 000 registered VAT businesses.

2.6   Municipal trading license registers

Companies pay an annual trading license tax, depending on turnover and other characteristics of the company. To discuss the functioning of the trading license tax within a system of integrated business registers, more information is needed. We have been informed about a Deregulation Project that is responsible for a pilot on a new trade licensing system in the municipality of Entebbe. We did not have the opportunity to visit a City Council or experts on license registers.

Since it is local authorities that are responsible for the license registers, the running of such registers could play a key role in the efforts to ensure a complete coverage of all economic units.

The present trade licensing system covers three competing objectives - registration, regulation and revenue generation. According to the Deregulation Project these conflicts not only limit the positive effects of the system, but also produce costly and negative side effects for both businesses and the administration. The three objectives are related to different subpopulations of units. Regulation is, for example, limited to a few activities - it is not necessary that all units are registered at the office responsible for regulation.

One of the Deregulation Project's approaches is to introduce a requirement for all business entities to register their operation with the local authorities in which they operate.

The Team recommends the establishment of a common Legal Unit Register (LUR), see section 2.7, which would serve the needs for registration of business units with the local authorities and that local authorities should cooperate with the LUR to ensure that all local units (and establishments) that are economically active in the formal sector are registered in the LUR. The registration certificate for trading license should be renewed each year and should be based on reports from the LUR.

The classification of activities should be based on the ISIC code of the statistical BR. If the regulation functioning of the municipality on health and safety inspection needs information in addition to the ISIC code, supplementary information could be included in statistical surveys on type of activity.

The Deregulation Project has proposed to replace the existing Trade Licensing Act with a new Business Activity Regulation and Registration Act. In this new Act the LUR should play a key role or there should be a separate LUR Act.

2.7 The development of a common Legal Unit Register

A common Legal Unit Register should be the tool to promote co-operation between agencies in developing an integrated system of administrative and statistical business registers.

The proposals for studies and pilot projects listed in section 2.8 are aiming at creating a linked file of all business registers. The linked file should be the first step in developing an administrative Legal Unit Register (LUR).

The functions of the LUR would be:
- To register all new business units.
- To assign a unique and official ID number, BIN, to all units.
- To assign registration certificates to be used by central and local authorities and in the private sector.
- To update variables that identify a business unit.
- To inform other agencies on new units and changes in updated variables.

The key variables of the LUR, which should be public information, are variables that identify a legal unit:
- Business Identification Number (BIN)
- Name
- Address or location
- Date of registration
- Economically active or not
- ISIC (or NACE) activity code
- Institutional sector code
- Size group

The information in the LUR should be easily available for all business registers and for the government and private sector in general. There should be fast procedures for informing other registers about new units. The LUR would have to be limited to the formal sector in the medium term.

A Working Group of all involved institutions should set up a detailed work plan. The Working Group should report to a Steering Group with members from the Ministry of Finance, Planning and Economic Development, Ministry of Justice and Constitutional Affairs, and Ministry of Internal Affairs.

Pilot projects on linking units in different registers should be carried out to find efficient solutions and to plan and calculate the costs of the total project. For each pilot and each step of the development work there should be indicators to monitor the progress and effects of the work.

The framework for an integrated system of business registers would be the development of an infrastructure of administrative basic registers on persons, land properties, addresses and businesses.

A system of integrated business registers would be an important measure to promote private sector development. The LUR would be a common component for all business registers. The use of the BIN would be supported by use of PINs, ID cards on adults, and identification numbers for land property and addresses.

Statistical time series on the development of the total economy, both the formal and informal private sector, would be useful indicators to measure the effect of improved functioning of the basic registers. Parts of the formal sector may be classified as black market economy. Methods to estimate the growth of the formal sector by reported economy and non-reported economy (or black market) would be useful indicators.

2.8   Proposed projects

The proposed studies and pilot projects for the development of a statistical business register and a Legal Unit Register are interrelated. The Work Plan for the program should outline these interrelations.

2.8.1   *Co-ordinated legislation for business registers*

The purpose of the study on the need for co-ordinated legislation is to create legislation that ensures technical efficient solutions and a good coverage of the formal sector.

Each business register is based on specific legislation, usually a legal act. The development of an integrated system of business registers needs amended legislation, and in particular a specific legal act for the LUR. In addition to the necessary legal and technical co-ordination of the different business registers, these registers need to have easy access to information from registers of population, land and addresses. The study on legislation should cover existing registers and the new Legal Unit Register.

2.8.2   *Use of administrative sources to update the statistical business register*

The purpose of the pilot project on the use of administrative sources to update the statistical business register is to gain experience and to make plans for annually and quarterly updating. The project should include a study of the possibility to get reports on new business units from administrative sources, as well as on the experience in the use of the linked file of the existing business registers in updating the statistical BR and the administrative registers. The pilot project should comprise a few localities.

The linked file means that the list of each business register is sorted by name and address/locality and organized in *one file system* where the units are matched at unit level by name and address. The task of the linked file is to identify the same unit in several registers and mark units that are identified in more than one register.

As mentioned above it is an urgent task to have an updated BR and this pilot should start as soon as possible. The pilot should include planning of the methods for creating the linked file and set up a work plan for a main project to cover the formal sector.

We propose to make a detailed work plan for a pilot project as soon as possible.

2.8.3   *Methods to link business registers at unit level*

The linkage of existing registers should be based on name, address and locality of the company / enterprise. The TIN register is already linked to the Company registers by the company ID variable.

The methods to identify and link units should have a database as the starting point and be supplemented by manual controls of linked units. Units that are not linked by the computer matching should be studied manually to identify a match or to learn the reason why a unit is missing in one or more registers.

The short-term objective of the linked file is to improve the coverage of the BR, collect new units and units that are not covered by the Census 2002. The short-term work may be based on existing legislation. The long-term objective of the linked file would be to serve as the initial situation for the establishment of an administrative Legal Unit Register, see project 2.8.6 below. When established the LUR will replace the linked file in updating the BR.

2.8.4   *Developing a current updated statistical BR for the formal sector*

The updating of the BR is to be based on reports of new units by administrative registers and a system of statistical business surveys. When a new unit is reported, UBOS should send a statistical form to the company to learn if the unit is economically active or not. For active units information needed to determine the ISIC code and size group should be collected.

The planning of this project should be based on the results of pilot project 2.8.2. The linked file for some selected regions should to be developed to cover the whole country.

A system of annual business statistics should be initiated. For large enterprises an annual census should be carried out. This census should be combined with a sample survey for other enterprises. The sampling design should ensure that all units of the BR would be covered during a period of 5 years.

Methods to measure how well the BR covers the formal sector should be developed. Actual methods are business censuses of samples of localities and household surveys on employment. The work plan should outline a separate project on the quality of the BR. Measures to ensure good coverage of the formal sector are discussed in project 2.8.8. The purpose of the project is to develop a reliable sample frame of enterprises and establishments for business statistics.

2.8.5   Including the government sector in the BR

The purpose of this component is to ensure consistent statistics about the total formal sector, and to study the interplay between the government and private formal sector.

The government sector organizes economic activities that are very close to the activities of the private formal sector. The activities are organized in units that might be seen as parallel to the private units of enterprises (legal unit) and establishments (work place). The work on the government sector in the BR should start when the linked file of all business registers is finished. Some of the administrative registers specify employer units of government sector.

According to the National Accounts the public sector includes limited companies and foundations that are owned by the government as well as the ordinary government sector. The government sector does not include limited companies and foundations.

2.8.6   Project to establish and operate a Legal Unit Register

The purpose of the Legal Unit Register (LUR) is to assign a unique and public ID for all legal units, the Legal Unit Identification Number, and to update the variables that identify each legal unit.

The owner and operator of the LUR should be the agency at which a new company has to be registered for the first time and where it is classified as a legal unit. The first agency to register should be the company registers of the Registrar General Department. The linked file discussed in project 2.8.3 should constitute the initial situation of the LUR.

It is important that the ID of the LUR, the Business Identification Number (BIN), be used in administrative data systems whenever possible. In some cases the use of BIN in administrative sources in the government and private sectors should be made mandatory by legislation.

2.8.7   Projects to develop the administrative business registers

Developing the company registers of the Registrar General Department

The first step should be to increase the amount of information registered in the computer file, e.g. by including all variables on the registration certificate.

The reporting and registration of company accounts should be implemented for all companies. The functioning of the system of private and public auditing is a part of this measure. The reporting on accounts should be common for RGD, URA and UBOS.

Developing the registers of Uganda Revenue Authority

The purpose of this project is to improve the system of tax registers to increase the revenue by proper identification of businesses to ease the tax administration.

The tax registers should cover all economically active units. The use of BIN, PIN and identification numbers for land properties and addresses in the tax registers would contribute to better coverage.

<u>Developing City Council license registers</u>
The City Councils registers could contribute to measures aiming at achieving a good coverage of businesses in the private formal sector. A project to develop the license registers is to be based on the Deregulation Project for Entebbe municipality.

2.8.8 Developing measures and procedures to increase registration of economically active units

The purpose of this project is to increase revenue and contribute to better statistics on the formal sector.

The best way to ensure that a register achieves a high coverage of active units is to develop an integrated system of basic registers with unique ID numbers for all basic units - persons, businesses, properties and addresses.

A system of regular controls of business units should be established. The control should include checks of identities in the field, and control and auditing of companies that do not report accounts and do not pay tax.

Several sources to obtain information about economic activity should be used and developed, e.g. license tax, register of landlords, payment of electricity and water bills, register of owners of vehicles, post box and telephone subscribers. Unique PIN, BIN and other identification numbers should be used in administrative procedures in both the private and government sector. Legislation should ensure that the use of official ID numbers is obligatory when appropriate.

2.9 Proposals for Norwegian assistance

Norwegian assistance could contribute to the proposed projects. Study visit to Norway, training in computer hardware and software, and use of Norwegian experts are possible contributions.

2.9.1 Study of the Norwegian system of business registers

The purpose of the study is to have a good understanding of the Nordic system of administrative and statistical registers and to discuss the development of a similar system in Uganda.

Parts of the study may be based on a visit of Ugandan experts to Norway (or other Nordic countries). The study visit should cover background information, legislation for each register, technical aspects of establishment and operation, IT solutions, and administration of the government sector. The team to visit Norway should include:
- One expert on establishing and operating registers
- One IT expert (hardware and software)
- One expert on legislation for business registers
- One expert on administration of the government sector.

These experts should study relevant documents before the visit to Norway. The visit should concentrate on technical solutions that can be transferred to related Ugandan projects. The expert on administration should learn how some of the Norwegian administrative business registers generate substantial amounts of income (which are transferred to the Ministry of Finance), study the use of resources to operate the basic registers, how the basic registers are used, and how they are funded.

It would be useful to have a unified plan for the visit for each of the three basic registers, i.e. for persons, businesses and land properties.

2.9.2   Training in computer hardware and software

The purpose of this component is to develop an efficient IT infrastructure of the databases for basic registers, i.e. developing standards on data models, hardware and software solutions.

Most of the developments projects listed above involve IT solutions. Since we are dealing with an integrated system of business registers that will be linked at the micro level it would be necessary to look at the hardware and software solutions for all registers. In this connection the hardware and software solutions for the basic registers in Norway may be studied in detail. The development of software expertise of the Ugandan Government agencies and private companies should be discussed within this project. The project should also include courses and training in actual hardware and software.

2.9.3   Use of Norwegian experts

A team of Norwegian experts and advisers should monitor the development of the integrated system of business registers. The experts could communicate by e-mail and otherwise and by visiting Uganda when necessary. One long-term consultant on business registers should be based in Uganda.

The purpose is to develop the qualifications of Ugandan staff in the field of basis registers. The long-term consultant should participate in the establishment of the system of business registers and advise on the development work.

2.9.4   Funding of the program

The budget for study visits use of Nordic experts, use of Ugandan private consultants, and development of Ugandan expertise should be seen as a whole. The allocation of the funding to these components should be flexible during the project period.

2.10   Conclusions

Our recommendation is that Government agencies should co-operate in developing an integrated system of business registers. The proposal is to establish an administrative Legal Unit Register (LUR) with the task to identify all Ugandan economic units and assign a unique and official ID number (BIN) to each unit. The official BIN is to be used as identifier in all administrative business registers and the statistical business register.

A review of the existing business registers in Uganda should be based on empirical pilot studies to get information on coverage and other quality aspects of each register. The administrative business registers are not alternative sources for updating a statistical business register. The best practices in updating a statistical BR are

1. to create a *linked file* at unit level of all business registers and use this file as a tool for updating the BR, and
2. to use the linked file to establish a common administrative *Legal Unit Register* (LUR) to serve all business registers.

3 Land registration

In recent years it has became widely accepted that a comprehensive and reliable system for titling and property registration, often named System for Land Administration, is a necessary infrastructure for social and economical development. On this background, similar projects world-wide are supported by United Nations, the World Bank, the European Union and bilateral aid organisations such as NORAD. Uganda has given priority to this issue by developing the Land Sector Strategic Plan and by taking steps towards implementation of a Land Information System.

3.1 Organisational overview

The Registry of Lands and Titles is under the Ministry of Water, Lands and Environment. There are currently nine district offices, which are planned to be increased to 56, one in each district, through a decentralisation programme. The Registry works in close co-operation with the Directorate of Lands and Survey, which have 20 branch offices.

3.2 Land tenure categories

Uganda has several categories of tenure:

Customary tenure
> This is "Traditional" countrywide land tenure, varying in different areas. It is more individualised in south and west, and more communal in the north and east.

Leasehold
> Land under this arrangement can be leased for 49 or 99 years, with development conditions. Ground rent and premium payable. A leasehold title is issued. It is countrywide and particularly common in urban areas.

Freehold
> This is registered ownership in perpetuity. A freehold title is issued. It is predominantly occurring in the south and west.

Mailo
> This is a limited form of freehold that recognises the tenants' rights. A mailo title is issued. This type of land arrangement occurs in the central region.

We will first (section 3.3) present the Land Sector Strategic Plan (LSSP), based on a draft for consultation by the Ministry of Water, Lands and Environment (May 30th 2001).[6] In section 3.4 we present our own findings about the Register of Lands and Titles, and in section 3.5 our conclusions and recommendations.

3.3 The Land Sector Strategic Plan

LSSP is the major framework for projects aiming at improving land administration systems and institutions of Uganda. This section gives a short overview of LSSP in order to underline its relevance to the purpose of this mission. Relevant statements are quoted in italics.

LSSP is a comprehensive strategy that *"is designed to provide the operational, institutional and financial framework for the implementation of sector wide reforms and land management, including the implementation of the Land Act."* (LSSP, Executive summary). LSSP includes strategies for a move towards a modernised, fully computerised Registry of Land and Titles.

LSSP is based on key national policies, including
- Decentralisation: *"LSSP will facilitate the decentralisation of land services, the devolution of land management and empower communities and districts to make better use of their land resources."* (LSSP, Executive summary).

---

[6] The LSSP was recently made available on Internet, at http://www.mwle.go.ug/LSSP.pdf.

- Strengthening the private sector: *LSSP will examine opportunities for privatisation of some land services, and for supporting the development of the private sector in relation to land sector activities." (*LSSP, Executive summary).

LSSP will positively contribute to the empowerment of the private sector:
"The quality of land services is crucial for the private sector, especially for businesses in agriculture. Uganda's private sector is characterised by small and medium enterprises, whose access to capital to acquire may be limited. As a consequence, the ability of the private sector to access credit by using land as collateral is limited, and limits productive investment portfolios." (LSSP, p.43)

The Land Registry will be modernised through LSSP:
"LSSP will ensure that the Land Registry is modernised, therefore contributing to private sector development. This is critical for the private sector because:
- *Records of charges and mortgages, which are used as collateral to secure lending, are registered in the Land Registry.*
- *The Land Registry can and should provide the public with information aiding e.g. who has title to which land.*
  (LSSP, p. 43)

"At the moment, The Land Registry does not serve the private sector needs satisfactorily; complaints include files lost, inefficiency, and widespread corruption, with the result that important transactions are disrupted.

Georeferenced information collected during the implementation of the LSSP will provide vital information to businesses, significantly improving on location of services, in terms of both catchment areas and protection of environmentally sensitive areas. This is especially true for infrastructure services such as roads, hospitals, schools, but it also applies to market centres and utilities." (LSSP, p.44).

3.3.1 Time Schedule
LSSP is defined by two phases, intended to coincide with the Government budget process and planning horizons.
- Phase one, 2001 – 2004
  Activities will be concentrated on establishing basic policy, institutional and technical frameworks within which future development will take place and a number of processes and techniques will be developed and piloted.
- Phase two, 2004 – 2011
  Only broad strategic directions have been identified at the outset, and in subsequent years it will be necessary to develop specific action plans.

3.3.2 The Land Information System
A central part of LSSP is to develop a Land Information System. The concept of a Land Information System was developed by the Swedish consultant company SwedSurvey (1996): *A base for a Land Information System in Uganda.*

An essential part of this system is a fully computerised Land Register linked with digital cadastral maps. Data exchange through electronic communication can also be established with external databases, like the population and business register.

3.3.3   Activities that support establishment of the Land Information System
LSSP describes several activities that have to be accomplished in order to meet the requirements of a modernised Land Information System:

- Land Information System
  This project will be carried out in four phases:
    1. Description of the current state, already done by consultants from South Africa.
    2. Development of a detailed plan for The Land Information System. This contract has been awarded given to SwedSurvey. The work has just started and is expected to be carried out in a period of six months.
    3. Pilot project.
    4. Full scale project.

- Rehabilitate the Land Registry
  "*Rehabilitation of the Land Title Registry has been proposed since the early 1990s. The present condition of the Registry is not conductive to capture, storage and retrieval of land information. Rehabilitation of the land records and reorganisation of the Land Registry is an integral component of the LSSP and vital for the continuing development of the land market. The rehabilitation process involves sorting and conservation of the records and electronic scanning to obtain secure backups. Records will then be computerised as an input to the comprehensive Land Information System. As there are insufficient personnel to handle the exercise and at the same time carry out routine land registry duties, auxiliaries will be contracted and trained for the purpose. The process will be carried out as an integral part of the decentralisation process.*" (Investment plan, final report p.24). USAID is supporting the rehabilitation through the SPEED project by organising the folios and provide new hard covers. Other activities are not known.

- Re-install the Geodetic Network
  The Surveys and Geodesy Division will be responsible for re-establishing the geodetic network (survey beacons and pillars), much of which was damaged during the seventies and eighties. This will be done using GPS receivers that will speed up the process immensely. We do not have any information about activities supporting this programme.

- Systematic Land Demarcation
  "*Systematic demarcation of customary land is a community-based, participatory process. It will provide comprehensive information on the location and size of every plot in a parish (including land held by Government and by the District Land Board) based on a hand sketch and ground markings of locally recognised plot boundaries. Individual plot identification numbers, users and occupants will be recorded. (…) Those landholders wishing to apply for Customary Certificate Ownership will be encouraged to do so.*" (Investment programme, Final report, p.25)

  Systematic Land Demarcation is a simple and cost efficient way of registering land under customary tenure. *The cost is estimated to be around one tenth of the cost of responding to individual sporadic certification requests*. (LSSP, p.37)

- Decentralisation
  The Land Act of 1998 requires that each of the 56 districts in Uganda has a District Land Office, funded from district administration funds and staffed with five professionals (District Land Officer, District Registrar of Titles, District Surveyor, District Valuer and Physical Planner). The District Land Office will provide technical support to the District Land Board. The implementation of this requirement is possible only as both funds and qualified personnel are available.

3.3.4 Financing the LSSP

"LSSP will be financed from a range of sources, including central government provision, local government provision, own revenue, development partners support, and the private sector.
The total cost of LSSP over 10 years is forecast between Ushs 130 bn($72m) and Ushs 160bn ($90m)."
(LSSP, Executive summary)

Low, medium and high cost scenarios have been worked out. The analysis and tables are presented in the Investment programme (Final report, January 2002).

The cost for phase 1 (2001/2-2003/4), allocated to Land Information alone, is estimated to be 10,599.4 Ushs million. The costs will, however, expand beyond this level, since *"the rehabilitation of the Land Registry is assumed to be more costly and take five years to complete."* (Investment programme, p.25, footnote 5)

The funding strategy is based on co-operation among various donors*:*
"It is the aim of the LSSP to secure donors support via budget support, and to encourage donors involved in the land sector to pool together their resources in an attempt to reduce transaction costs, increase flexibility of implementation and allowing the programme to be responsive to local challenges and needs." (LSSP, p.55)

"The development partners will support the sector in its entirety; they will synchronise their funding procedures, monitoring and reporting requirements. Missions and project appraisal will be carried out in a rationalised and co-ordinated manner." (LSSP, p.56)

3.4 Status of the Register of Land and Titles
The Register of Lands and Titles in Kampala is responsible for registering leaseholds in the entire country. The transactions concerning change of ownership, mortgages, other encumbrance etc. is recorded on paper. The register covers less than 15% of the country and an estimated 50% of the registered documents are obsolete.

The register is a completely manual system, where all documents concerning one property is collected in folios, which again are gathered in volumes. Small steps towards computerisation have been taken, for instance in accordance with projects carried out by the University of Makerere. The archives are in a very unsatisfactory physical condition, there is insufficient space, many volumes of the documents are stacked in piles on the floor, and the hard covers are often damaged due to age and humidity.

There is severe lack of resources. Only three persons are responsible for the daily work of registering leaseholds for all of Uganda. There is limited space and lack of technical equipment, not even a photocopier is available. The registry has no computer.

3.4.1 Modernising the Land Register
The Land Register will be modernised through the realisation of the LSSP and the development of the Land Information System. SwedSurvey has started to develop a detailed plan for the Land Information System. This Plan is expected to define the structure of the database, including the definition of variables.

3.4.2 The parcel identifier
Properties are identified in three ways: Volume/folio system, block/plot system, and a street name/plot number system in urban areas (at least in Kampala).
- The volume/folio system
  The storage of the manual documents in the registry is organised in the following way: The documents referring to a property is gathered in a "folio". A "volume" comprises of up to 25 folios. When the 25th property is subdivided, a new volume is established. There are never more than 25 folios in one volume, because that is the maximum size of the physical shelves.

- The Block-Plot system
  In rural areas and areas that are under the *mailo* tenure there is a block/plot system for identification of a parcel. A block follows natural borders and can include an area of several square miles. There is in principle no limit to the number of plots.
- The street name/plot system
  At least in the city of Kampala, a property is identified by its address, which is the street name and plot number.

The Ugandan authorities recognise the need for a standard parcel identifier. The principles of a unified, national standard for parcel identification has not yet been decided upon. One possibility is to introduce the block and plot system also in urban areas. (This was done in Norway when a unique identification system for properties was established in Norway in the beginning of the 1980s). This issue is expected to be studied in the SwedSurvey project.

3.4.3 To be considered: Links to other registers

No links to other registers have been established. This is as expected, since the most important external registers are at present non-existing or in a very rudimentary form. This may, however change, and this aspect has to be dealt with in the forthcoming design and implementation of the Land Information System.

A well established mature system of land information is organised as a system of separate databases administered by separate jurisdictions. The information is recorded only once and there are links between the registers. In Norway the address is administered in the cadastre, while it is transferred to and used by the Central Population Register. In this context, the Team recommends that it should be considered to include the address, the personal number and the business number in the Land Information System of Uganda.

3.5 Conclusions

The Team concludes that the LSSP is a good framework for the improvement of the Land Administration System in Uganda. A possible Norwegian contribution should concentrate on activities that facilitate the establishment of the Land Information System, training programmes, capacity building and institutional strengthening of the Land Registry. It is of great importance for statistical purposes that the Land Registry is up and running, complete and well functioning. This will support and strengthen the private sector as described.

The challenge is to identify projects and activities that will speed up the ongoing processes and be complementary to already initiated programmes. This can only be done in co-operation with the relevant institutions of Uganda. However, in an initial phase, Norway should, if feasible, co-operate with Sweden in the development of the Land Information System. It would be of particular importance to contribute to the proposed pilot projects, because this would be an opportunity to influence the design and functionality of the system. It would also create a platform for assessing the feasibility of supporting other projects that support the realisation the elements of LSSP.

The Team recommends that Norway and Uganda co-operate in defining projects that strengthen and support the LSSP. The team proposes that special consideration should be given to the following projects:

- Implementing the Land Information System
  Norway could assist to make sure that the Land Information System includes the data that are of importance for producing national statistics, and that links to other national registers like the Population- and the Business Registers are established. In this process, contributions from UBOS are essential.

- Rehabilitate the Land Registry
  There is a well-documented need for the rehabilitation of the Land Registry. This could be organised as a separate project co-ordinated with the project of establishing the Land Information System and also co-ordinated with the decentralisation programme.

- Systematic demarcation
  Undertaking this is a step towards a complete land register. This will be carried out in accordance with the needs and priorities of local communities. It could be assisted by Norwegian expertise.

- Training and capacity building
  The tasks of modernising the register and also in the context of decentralisation require more trained personnel, at local, district, and national level. Training activities should be carried out in co-ordination with a programme for decentralisation and institutional strengthening.

- Institutional strengthening
  It is of paramount importance to strengthen the institutions involved, like the Land Registry and the Directorate of Lands and Surveys. This must also be seen in the context of decentralisation.

4 Risk evaluation and security

There is always a risk that "unintended use" of information collected in a register may be used against the interests of the units in the register or to individuals connected to the unit through the register (persons or enterprises). Consequently, there should be an evaluation of possible risks related to the register and creation of a security program to minimize this risk.

The risk of misuse depends on the number of recorded items and the sensitivity of the information. Examples of data in a person register may be: Name; PIN-code; date of birth; place of birth; name of father and mother; marital status; name of spouse; date of birth and PIN-code of spouse; name, date of birth and PIN-code of children; place of living (LC I or address); former addresses; citizenship; previous citizenship; and the right to vote (or not). A register with such information may in certain situations be a threat to individuals, as in the following examples:

- Criminals who are seeking to rob or to blackmail people: In a CPR there is usually no information about income or wealth of an individual or his/her family, but there may be situations where access to such information by certain people or organizations would make the registered person feel uncomfortable or threatened. People with illegal admission to the register could misuse the information for blackmailing.
- Misuse of power by officials: The head of a public agency may want to apply special pressure upon people from certain places of Uganda or from certain foreign countries living in Uganda. From the register they could be able to make files about this group of people and keep an eye on them.
- "Rebels", who consider people from certain districts as their enemies, may misuse the information for their own political or other purposes.
- Foreign governments may want information about people from their country living in Uganda to monitor and eventually to "render harmless" people that may be considered a threat to the government of their home country.

To protect the information in the registers it is necessary to develop rules and procedures for access to the registers, and for storing and securing the information wherever it may be. For that purpose there is a need for security measures to make sure that the security strategies are aligned with the objectives and consistent with the laws and regulations of Uganda. It is important that it is the agency running the register that is also responsible for the security measures.

On the basis of the risk evaluation mentioned above there should be design and implementation of measures to reduce the risks to an acceptable level. There should also be rules for reporting situations that may alter the risk. It is important to have an information program for implementing the rules and procedures into the organization, to make the staff permanently concerned about security issues, and to act appropriately if somebody breaks the security rules. The fact that the organization has an information security strategy and a program for implementing this, is important for the confidence of the public in the register.

Appendix 1: Terms of Reference

TERMS OF REFERENCE FOR THE CONSULTANT TO REVIEW THE REGISTERS OF BUSINESS ES-TABLISHMENTS AND COMPANIES, BIRTH AND DEATH AND POPULATION, LAND TITLES AND OTHER PROPERTY.

MISSION: To review the different existing registers in Uganda including objectives, current working methods and coordination in order to present a proposal on how to strengthen and establish centralized registration systems, working methods and coordination.

The registration system in Uganda is such that each system is independent and registers are held by different organization/institutions. It is of great importance that as far as possible, institutions that collect data use the same registers.

CHALLENGE:

How the Government of Uganda set up Central Registers including
- Central Population Registers
- Central Register of Establishments and Enterprises
- Central Register of Land Titles and Property.

How these registers will be linked up, maintained and updated , for instance in respect to births and deaths, emigration, immigration, new businesses etc.

SPECIFIC ISSUES TO BE ADDRESSED
Review the registers mentioned above and specifically look at the following areas for each register:
1. Analyse and list the requirements and demands of the above mentioned registers for both the implementing organizations, the government in general, the private sector and public at large.
2. The review will analyse the kind of information collected, its relevance and recommendations for inclusion of any other variables that are not being collected but are of substantial significance.
3. Consult with persons working with the different registers on the methodologies used to gather information by the different registration systems, their effectiveness and any recommendations on how to make them operate better. Provide recommendation on how best to update these registers.
4. The linkages between the different organizations that seem to be doing the same type of work and how they can consolidate there efforts and resources to be able to achieve the common objective.
5. Prepare and submit report to the Minister of Finance in charge of Planning, the Executive Director of UBOS and the persons in charge of the different Registers in the Ministry of Justice and Ministry of Lands.

EXPECTED OUTCOMES AND OUTPUTS
◆ A detailed report outlining the findings of the review and where the findings are falling short, possible recommendations will be made in consultation with the responsible persons from the agencies responsible for these registers. (The recommendations will be for use by the bodies responsible for the different Registers)
◆ The report should also include best possible ways of linking these different registers for consideration in future after the present Registers have been perfected.
◆ The report will also present a priority plan on how and where to start the implementation, i.e. registers and institutions.

PERSONS INVOLVED

For assistance and advice the review process will include the following persons:

1. Mr. Bisereko Kyomuhendo, Ag. Registrar General, Registrar of Companies, MOJCA.
2. Mr. Joel Cox Ojuko, Registrar of Birth and Death, Office of the Registrar General, MOJCA.
3. Ms. Imelda Atai, in charge of Registration of Business Establishments, UBOS.
4. Mr. Augustine Wassago, in charge of Vital Registration Statistics, UBOS.
5. Mr. Robert Nyombi, Registrar of Titles (Land Register), Ministry of Water, Lands and Environments.

REPORTING GUIDELINES

The analysis report will be presented to the Executive Director, UBOS and the representatives from the bodies responsible for the different Registers including:

- Office of the Registrar General, Ministry of Justice & Constitutional Affairs
  - Registrar of Birth and Death
  - Registrar of Business Establishments
- Office of the Registrar of Lands, Titles and Properties, Ministry of Lands & Environment
- Uganda Revenue Authority
- Uganda Investment Authority
- Uganda Manufacturer's Association
- The Electoral Commission
- Ministry of Internal Affairs
- Kampala City Council

The Executive Director, UBOS will then present the findings to the governing body.

QUALIFICATIONS OF THE CONSULTANCY

The consultant should have practical experience in Design and Establishment of

- Population Registers (Central Population Register and births and deaths register)
- Business Registers including enterprises and establishments.
- Land and property Registers and GIS based registers.

As an added advantage the consultant should have practical know how of institutional technical cooperation.

ADMINISTRATION

- TIME SCHEDULE

The program will have 2 visits. The first visit should be for 2 weeks in January and February to meet and draft the initial report. The second visit, three weeks later is for the stakeholders meeting followed by a revision and final proposal within 1 week. Total period is between 1 to 4 weeks.

- RESOURCES

UBOS will provide office space to the team and other support services.

Appendix 2: Schedule of meetings

Date	Time	Activity	Responsible Organi-sation
Monday 17th March	08.00	Arrival of Consultants	Norwegian Embassy/ UBOS
	9.30 – 10.00 am	Courtesy call on the Executive Director, UBOS	UBOS Entebbe
	2.00 – 4.00 p.m.	Meeting with Embassy Officials	Embassy
Tuesday 18th March	9.00 – 10.00 am	Briefing on the political situation in Uganda	Embassy
	11.00 – 12.00	Commissioner for Land Registration	Embassy
	2.00 – 5.00 pm	Meeting with the core group at the Office of the Registrar General. Tour of the Birth and Death Register, Company Register, Business names register	Office of the Registrar General
Wednesday 19th March	9.00 – 12.00	Land Register (Rygh) UNICEF workshop on birth registration (Brunborg) Company register (Gåsemyr and Tønder)	UBOS UBOS Registrar General
	12.30 – 4.30 pm	Electoral Commission	Electoral Commission
	7.00 pm	Reception at Hans Venvik's house	Embassy
Thursday 20th March	9.00- 12.00	UBOS Business Register Mukono land register (Rygh)	UBOS Institute of Social Research, Makerere
	2.00- 3.00 pm	Uganda Revenue Authority	URA
	3.30 – 4.00 pm	Mr. Tumuhairwe, Ministry of Finance	UBOS
	4.30 – 5.00 pm	Deregulation Project, Ministry of Finance	UBOS
Friday 21st March	All day	Visit of Brunborg to Arua: District Executive Committee, Arua Katrini Sub Country Omvuko Village Aiivu Sub County District Data Bank Mayor of Arua Report writing	UNICEF
Monday 24th March	2.00 pm	UNICEF	UNICEF
Tuesday 25th March	2.00 pm	Minister of State for Planning	UBOS
Wednesday 26th March	03.00 pm	Uganda Law Reform Commission Report writing	Embassy
Thursday 27th March	10.00 am	Report presented to stake holders	UBOS
Friday 28th March	09.00 am	Report presented to Embassy	Embassy

Appendix 3: Persons met

More people than those mentioned below attended some of the meetings but we did unfortunately not get their names and functions.

Arua District
Andama Richard Ferua, Chairman, LC V
Lonjino Ocitia, Vice Chairman, LC V
Ali Adrama, Speaker, District Council
Teddy Opinia, Deputy Speaker, District Council
Dan Opima, Secretary for Health
Rita Popo, Secretary for Works and Technical Services
Leon Candia, Secretary for Education
George Ambe, Secretary for Production and Security
Swaib Akifo, Secretary for Finance and Planning
Stephen Ouma, Assistant Chief Administrative Officer
Shaphan Andeku, District Statistician
Joyce Eyoa, Senior Records Assistant
Faima Almaz, Data Entry Clerk
Luigi Aloma, Chairman, LC III, Katrini Sub County
Monica Odaga, Chief, Katrini Sub County
George Bulea, Production Officer, Katrini Sub County
Victor Angutoko, Vice Chairman, PDC member, Katrini Sub County
Nelson Akuma, PDC member, Katrini Sub County
Joseph Ojotia, Chairman, LC III, Aiivu Sub County
Shamar Aluma, Parish Chief, Edanya/Paranga
Mr. Apangu, PDC member
Philista Drabile, PDC member
Mrs. Andama, PDC member
Zena Okuvari, Head of household, Omvuko village
Sabiti Khalfan, Mayor of Arua
Silas Adrabo, Chairman, LC I, Arua

Electoral Commission
Eng.Dr. Badru M. Kiggundu, Chairman
Steven Ongaria, Commissioner
Jenny B. Okello, Commissioner
Herbert Wamboko, Systems Analyst and Head Data Processing
Opar Malakwang, Statistician,Voter Registration Department
Ibrahim Lutalo, Acting Head, Voter Registration Department
Frank Rusa Nyakaana, Head Legal Department
Sam A. Rwakoojo, Secretary

Ministry of Finance, Planning and Economic Development
Hon. Isaac Isanga Musumba, Minister of State
Charles Zirarema, Population Secretariat
Frances Nsonzi, Deregulation Project
Ian Katimbo

NORPLAN Uganda Ltd.
Lawrence Levy Omulen, Managing Director

Norwegian Embassy, Kampala
Tore Gjøs, Ambassador
Sam Kajoba, Executive officer
Harald Karlsen, Counsellor, Deputy Head of Mission
Hans Venvik , First Secretary Development

Registrar General's Department
Bisereko Kyomuhendo, Ag. Registrar General
D. Wandira, Registrar of Birth and Death

Register of Land and Titles, Ministry of Water, Lands and environment
Jonathan N. Tibisaasa, Commissioner for Land Registration
Robert Nyombi, Registrar of Titles (Land Register)

Ugandan Bureau of Statistics
John B. Male-Muhasa, Executive Director
Seth N. Mayinza, Director, Director Business, Industry, Agriculture & Energy Statistics (BIAES)
Imelda Atai, Principal Statistician, BIAES
Augustine Wassago, Statistician, Population and Social Statistics
Kizito Kasozi, Principal Economist and National Field Organiser, 2002 Population & Housing Census

Uganda Law Reform Commission
Prof. J.M.N. Kakooza, Chairman
Jean Kyazze, Commissioner
Apecu Joan, Senior Legal Officer

Uganda Revenue Authority
Ceyllas Kagyende Biruneyi (?), Deputy Commissioner, Domestic Direct Taxes
Mpeka Muhumuza, Commissioner, Information Technology & Corporate Services
Steven S. Mugoya, Assistant Commissioner, Domestic Indirect Taxes

UNICEF
Juanita Vasquez, Planning, M & E Officer
Asadur Rahman, Project Officer, Birth Registration
Participants from all over Uganda at the UNICEF Workshop on birth registration

Appendix 4: A short description of Norwegian practices in establishing and operating administrative and statistical basic registers

The Norwegian infrastructure on the use of basic registers and unique and official ID numbers for important units in administrative procedures is well developed. This appendix gives short presentations of

- Population registration and the Central Population Register
- The Legal Unit Register and other business registers
- The Land Information System

Information on establishment and operation of this infrastructure could serve as models for the development of a similar Ugandan infrastructure. Section 4 discusses how the three basic registers are interrelated and how they can be linked at the micro level.

A. Population registration and the Central Population Register

Civil registration of vital events in Norway started by the church in the 17th century. The Church registered baptism, marriage and funeral in each parish. Local population registration offices were established in some municipalities at the beginning of the 20th century, the first in Oslo in 1906. The registers were used for administrative and statistical purposes. After the Second World War population register offices were established in all municipalities. The registers were based on manual procedures and cards.

During the 1950s and 1960s several municipalities and governmental bodies started to operate computerised registers and this was done by all municipalities in 1991. Statistics Norway was responsible for the Central Office of Population Registration during the period 1946-1992. The local population registration office is now part of the Directorate of Taxes, which has a local office in each municipality (for small municipalities in groups of municipalities).

In Norway the employer association initiated the creation of a Norwegian unique ID number for person (PIN) in 1964. The purpose of this was to reduce the response burden of the businesses in the private sector and to have a reliable identification system for persons. A computerised Central Population Register (CPR) covering the total population was established in 1964 on the basis of the population census in 1960 to assign the PINs and to serve the government and private sector. Today most administrative data systems and statistical files on persons use the PIN to identify a person, with links to the CPR for transferring demographic data.

The methods for establishing the CPR should be of interest when discussing methods to develop a Ugandan CPR:

a. The Census 1960 micro file was the starting point. The variables name, sex, date of birth, the assigned PIN and address constituted the initial situation of the CPR. Marital status??

b. The initial file was sent to the population registers in each municipality, where the PIN was recorded manually on the card for each person. A person was identified manually by name, date of birth and address.

c. The local population registers reported births and deaths occurring during the period 1.11.1960 (Census date) - 1.10.1964 (starting date for the CPR).

d. The CPR is continuously updated with data on births, deaths, marital changes, migrations, etc. from 1.10.1964

e. Municipal population computerised registers (punched cards) were created for the use in tax administration and Social Service from 1964.

f. The Population Census per 1.11. 1970 served as the Bench Mark for a second initial situation of the CPR. From the Census micro file several variables on family relations were included, such as PIN of mother, father and spouse, and family nucleus unit.

g. The legislation for the 1960 Census covered the use of the Census to update the local population registers, but the use of the Census to establish a CPR and the introduction of a PIN in 1964 were not foreseen in the 1960 legislation. The legislation for the Census 1970 covered statistics, population registration, and the CPR. A revised Act on population registration was approved in 1970.

The PIN is a permanent and unique ID number for each person. The first six digits give the date of birth, the nest three are a serial number which includes information about the sex of the person and the century of birth, and the last two digits are check digits to detect wrong person numbers. The number is only changed if there is an error in the date of birth or sex.

The PIN is widely used by public and private institutions, like tax authorities, social security, driver's license register, banks, insurance companies, army, health facilities, schools and universities.

The central person register is extensively used for administrative, statistical and research purposes. The person number plays an essential role in this, as it enables the use of matched data from different sources, e.g. from the population register, other registers, population censuses and sample surveys. This has been done in a number of cases, including projects to study the mortality by social characteristics and the analysis of fertility patterns by education and income.

There is no national ID card Norway. The reason for this is that several ID cards already are in operation, such as credit cards, bank cards, driver's license, passport, and post office ID card. These cards are accepted as identification document in the government and private sector. The institutions responsible for these cards have access to relevant variables of the CPR. Most adults keep several of these cards and there is no need for a general national ID card.

B. Co-ordination of business registers by the Legal Unit Register

Maintenance of a statistical business register should be based on administrative sources on business units. In Norway a comprehensive and close co-operation between the administrative and statistical business registers has developed during the last decades. The Norwegian administrative legal unit register and the co-operation with the statistical business register is a model for other countries.

The statistical business register
When the statistical business register was established in 1965 only a few industries were covered. Business censuses and statistical surveys were important sources for updating. Year by year more and more administrative sources were used to capture new business units. In the 1970s central administrative business registers on employers (Social Security) and VAT units (Tax Agency) were organised as computerised databases and became the main sources for information on new units.

A linked file of the employer register, VAT units and the statistical business register were developed as an auxiliary file to update the business register with new units. The work on linking units was based on a combination of computerised and manual procedures. When a new enterprise was identified a statistical questionnaire was sent to collect information needed to register the new unit in the business register. The use of the linked file was replaced by the administrative Legal Unit Register (LUR), which has been in operation since 1995.

The administrative Legal Unit Register (LUR)
The LUR was established in 1995. The official name is the Central Co-ordinating Register for Legal Entities. The LUR is a basic register that is made up mostly of legal units from government registers, such as employers, value-added units, corporations, foundations and enterprises of the statistical BR. All other

governmental administrative registers are obliged to use the same units with the registered information. A legal unit is identified by name, address and business identification number (BIN). Most units of the LUR are registered in several administrative registers and much work has been done to ensure that one unit is registered only once in the LUR.

As most legal unit registers in the public sector were linked to the business register already from the 1970s, the Division for Business Register of Statistics Norway was heavily involved in creating the linkage between the different registers and the LUR. Statistics Norway developed the initial situation of the LUR register as a project funded by LUR.

One interesting quality of the Norwegian system is that by legislation a bank account has to be identified either by a PIN or by the ID assigned by the LUR. The legislation related to the LUR ensures that a new business unit should be registered in the LUR very early in the establishment process and that the LUR should have an almost complete coverage of all kinds of business units. The LUR covers all sectors of the economy, including agriculture and the public sector.

Some of the variables of LUR are information available to the public, such as name, address, ID number, NACE code (see List of Acronyms) and institutional sector.

The Division for Business Register (DBR) in Statistics Norway is responsible for several important functions in the operation of the LUR. The statistical unit of establishments is registered in LUR as a sub-unit used by the Employer-Employee Register. Thus the DBR is responsible for "profiling" (or dividing) the unit of enterprise (or legal unit) into units of establishment. Also the governmental sector is profiled into legal units and establishments. In addition intermediate units like governmental agencies or institutions are being profiled by DBR. The intention is to create units that are as similar as possible with units in the private sector. The DBR is also responsible for the activity code classification based on NACE for all units and for the institutional sector classification of the enterprises. The result of this co-operation between LUR and Statistics Norway is that in principle all units and their NACE codes and institutional sector codes are exactly the same in the LUR and the statistical business register.

Examples of the use of the Business Identification Number assigned by the LUR:
- By legislation a bank account has to be identified by either by a BIN or a PIN.
- By legislation a company has to include its BIN in the letterhead and on invoices.

C. Land Information System and Address Administration

The Land Information System comprises the following units: property parcel, building, dwelling and address.

The legal basis for address administration in Norway is the Law on land sub-division, which is the cadastral law. Addresses are included in the Norwegian cadastre.

The law defines two kinds of addresses. In urban areas an address is defined by a street name and a house number. In rural areas, where street names until recently were non-existent, the identifier of the property is mostly used. However, street names and house numbers are becoming more common also in rural areas.

All dwellings, public buildings and buildings for all kinds of private enterprises, shall according to the law be given an address. The address shall be assigned at the time of the formation of the property, and before the building is actually being constructed.

The addresses have references to constituency, postal code, school district, etc., and they have co-ordinates. The co-ordinate is normally located to the centre of a building. If the building has more than one entrance and more than one address, the address co-ordinate is located at the door-step. In multi-

apartment buildings, every dwelling is given a unique address. This was done in a nation-wide project linked to the 2001 Population and Housing Census.

In Norway, the municipalities are the building and planning authorities, and they are also the authorities of land sub-division. It is regulated in the law that the municipalities are also in charge of awarding, changing and deleting addresses. They are, according to the same law, obliged to send updated address information to the Norwegian cadastre.

The Norwegian cadastre is called the GAB system. GAB stands for Ground parcel, Addresses and Buildings. The database is complete in a nation-wide context. The data system is operated by the Norwegian Mapping Authority. The municipalities and the land registry (where information on titles etc are included) are obliged to send updates to the GAB system.

The GAB system is part of a comprehensive network of government operated databases. An important pre-requisite is the existence of standardised identifiers which makes it possible to transfer data from one database to the other, and to combine information from various data sets.

The figure below gives an overview of the database network. For simplicity the role of municipalities as data providers is not included in this figure.
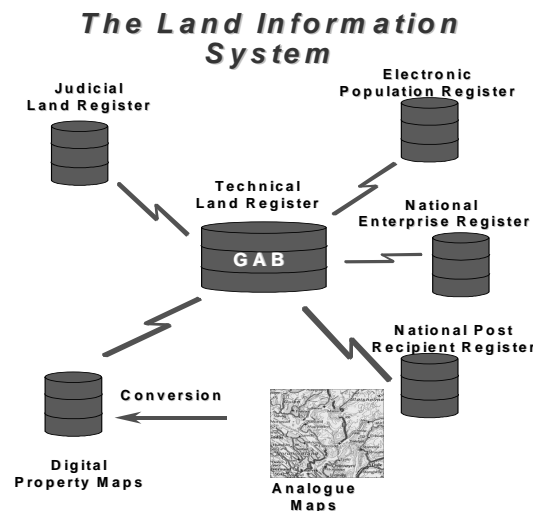
The standard for addresses is defined by law and this standard is also used in the population register. The cadastral unit is defined in a standardised way. Buildings are identified with a unique 8-digits code, and all persons have a unique 11-digits personal code.

D. Integration of the three basic registers

The most important units of administrative procedures and official statistics are natural persons, establishments and dwellings (the dwelling is related to property parcel / building / address). An infrastructure of basic registers of these three units has been developed in most European countries and represents an important tool in developing efficient administrative procedures.

In more and more countries the administrative basic registers assign official and unique ID numbers for persons (PIN), business units (BIN), and dwellings/addresses (DIN) to be used for administrative and statistical purposes. Interesting opportunities emerge when basic registers can be linked at unit level. Both the CPR and all business registers use the address code of the Central Register of Address and by this code a person and a business can be linked to the Land Information System at unit level. In Norway there is a link between natural persons and business units through the Social Security data system of employee jobs. With this register the job unit is identified by the PIN and the BIN through the link between the registers of persons and businesses.

Recent publications in the series Documents

2001/5 H.V. Sæbø: Strategic planning and management in Institutio Nacional de Estatística, Mozambique: Short Term Mission Report, November 2 - 9, 2000

2001/6 H.V. Sæbø, J. Byfuglien and R. Johannessen: Quality issues in Statistics Norway

2001/7 J. Byfuglien: Comparability of income data: Project report

2001/8 A.S. Abrahamsen,.M.Q. Andersen and R.Ragnarsøn: Project: Quality of Manufacturing Statistics and Evaluation of Methods for Producing Preliminary and Final Figures. Final Report

2001/9 T. Skoglund: Employment in the Norwegian National Accounts

2001/10 O.C. Moen: Nordic Economic Growth in Light of New TheoryL: Overoptimism about R&D and Human Capital?

2001/11 H.V. Sæbø: Strategic Planning and Management in Instituto Nacional de Estatistica, Mozambique: Short Term Mission Report, August 27 - September 6, 2001

2001/12 B. Hoem: Environmental Pressure Information System (EPIS) for the household sector in Norway

2001/13 H. Brunborg, I. Bowler, A.Y. Choudhury and M. Nasreen: Appraisal of the Birth and Death Registration Project in Bangladesh

2001/14 K. Rypdal: CO_2 Emission Estimates for Norway. Methodological Difficulties

2001/15 E. Røed Larsen: Bridging the Gap between Micro and Macro: Interdependence, Contagious Beliefs and Consumer Confidence

2001/16 L. Rogstad: GIS-projects in Statistics Norway 2000/2001

2002/1 B. Hoem, K. Erlandsen og T. Smith: Comparisions between two Calculation Methods: LCA using EPIS-data and Input-Output Analysis using Norway' s NAMEA-Air Data

2002/2 R. Bjørnstad: The Major Debates in Macroeconomic Thought - a Historical Outline

2002/3 J. L. Hass and T. Smith: Methodology Work for Environmental Protection Investment and Current Expenditures in the Manufacturing Industry. Final Report to Eurostat.

2002/4 R. Bjørnstad, Å. Cappelen, I. Holm and T. Skjerpen: Past and Future Changes in the Structure of Wages and Skills

2002/5 P. Boug, Å. Cappelen and A. Rygh Swensen: Expectations and Regime Robustness in Price Formation: Evidence from VAR Models and Recursive Methods

2002/6 B.J. Eriksson, A.B. Dahle, R. Haugan, L. E. Legernes, J. Myklebust and E. Skauen: Price Indices for Capital Goods. Part 2 - A Status Report

2002/7 R. Kjeldstad and M. Rønsen: Welfare, Rules, Business Cycles and the Employment of Single Parents

2002/8 B.K. Wold, I.T. Olsen and S. Opdahl: Basic Social Policy Data. Basic Data to Monitor Status & Intended Policy Effects with Focus on Social Sectors incorporating Millennium Development Goals and Indicators

2002/9 T.A. Bye: Climate Change and Energy Consequenses.

2002/10 B. Halvorsen: Philosophical Issues Concerning Applied Cost-Benefit Analysis

2002/11 E. Røed Larsen: An Introductory Guide to the Economics of Sustainable Tourism

2002/12 B. Halvorsen and R. Nesbakken: Distributional Effects of Household Electricity Taxation

2002/13 H. Hungnes: Private Investments in Norway and the User Cost of Capital

2002/14 H. Hungnes: Causality of Macroeconomics: Identifying Causal Relationships from Policy Instruments to Target Variables

2002/15 J.L. Hass, K.Ø. Sørensen and K. Erlandsen: Norwegian Economic and Environment Accounts (NOREEA) Project Report -2001

2002/16 E.H. Nymoen: Influence of Migrants on Regional Varations of Cerebrovascular Disease Mortality in Norway. 1991-1994

2002/17 H.V. Sæbø, R. Glørsen and D. Sve: Electronic Data Collection in Statistics Norway

2002/18 T. Lappegård: Education attainment and fertility pattern among Norwegian women.

2003/1 A. Andersen, T.M. Normann og E. Ugreninov: EU - SILC. Pilot Survey. Quality Report from Staistics Norway.

2003/2 O. Ljones: Implementation of a Certificate in Official Statistics - A tool for Human Resource Management in a National Statistical Institute

2003/3 J. Aasness, E. Biørn and t. Skjerpen: Supplement to <<Distribution of Preferences and Measurement Errors in a Disaggregated Expenditure System>>