

The importance of Lacor Hospital in the local economy

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Acronyms

ACAO	Assistant Chief Administrative Officer
AHSPR	Annual Health Sector Performance Report
CAO	Chief Administrative Officer
DHO	District Health Officer
FGD	Focus Group Discussion
FY	Financial Year
GDP	Gross Domestic Product
HC	Health Centre
LRA	Lord's Resistance Army
LST	Local Service Tax
NHE	National Health Expenditure
NRM	National Resistance Movement
NSSF	National Social Security Fund
OOP	Out Of Pocket
PAYE	Pay As You Earn
PFP	Private For Profit
PNFP	Private Not For Profit
UBOS	Uganda Bureau of Statistics
UMHCP	Uganda Minimum Health Care Package
UMU	Uganda Martyrs University
UNDP	United Nations Development Programme
USh	Uganda Shilling
WHO	World Health Organization

Executive summary

St Mary's Lacor Hospital, founded in 1959 in Gulu, Northern Uganda, is the second largest Hospital in Uganda as for size, quantity and range of services delivered. In more than 50 years it expanded from a relatively small health unit to what is today called "Lacor Hospital Complex", including the hospital, one nursing school, one school for laboratory technicians and three peripheral Health Centres. In addition, the hospital is a teaching site of the Faculty of Medicine of the University of Gulu and of the School for Anesthetic Officers of Mulago Hospital, the biggest hospital in the country, located in the capital Kampala. A study conducted in 2003 by the Department of Health Services of Uganda Martyrs University (UMU) on "*The economic impact of Lacor Hospital on the surrounding community*" established that "... *Lacor Hospital had and still has a strong economic impact on the area*" (Uganda Martyrs University, 2003).

Considering the major changes that have occurred in the area, the Lacor Hospital Complex Management requested a repetition of the study.

The most important change is the return of peace and security after more than 20 years of guerrilla war with its corollaries of death, abductions, displacement and social disruption. Lacor Hospital never ceased to function and, for the entire duration of the war, it was seen as a sort of bulwark of safety, a safe haven where the sick got good quality health care and where thousands of people, for years, every night, sought refuge and protection. The way in which the hospital and its personnel faced the devastating epidemic of Ebola, in 2000-2001, only strengthened the image of the hospital as a sort of "sanctuary". Slowly, peace is allowing the population to resume a progressively normal life. Freedom of movement led to a flurry of new economic activities.

This study attempted to determine and quantify, at least in part, the economic importance of the hospital and to assess possible changes in the way the hospital is seen and perceived by the community in the new and continuously changing reality.

Lacor Hospital Complex and, especially, the St Mary's Hospital Lacor (hereafter simply called Lacor Hospital) still play a very important economic role for the surrounding community and for the entire Gulu District.

For the Financial Year (FY) 2010/2011, the study estimated the financial flows going directly to the local economy from the hospital (salaries, purchases of supplies, local taxes) and indirectly through the hospital (local expenditures by in- and out-patients and by the students of the three schools attached to the hospital). It also assessed the induced effects of the direct and indirect flows on the local economy.

The study relied on data contained in hospital records, on formal interviews to hospital personnel, patients, owners and managers of local businesses and their customers and to a series of key informants. Focus Group Discussions, personal observations and informal interviews were also utilized.

Even in the changed environment, with many more economic actors playing an important and continuously evolving role, the Hospital is still a major economic player in the local economy.

As in 2003, the bulk of the Lacor Hospital Complex income (76%) came from abroad, the major financier being the Corti Foundation, providing about 35% of the total. Adding the contribution of the Uganda Government, about 84% of the total income came from outside Gulu District.

The financial flows entering the local economy **directly** from the hospital and coming from outside Gulu District, was about Uganda Shillings (USh) 2,435,725,128 (US \$ 1,048,526) at the 2010/2011 average exchange rate of USh 2,323 for 1 US\$.

An even bigger amount of money, USh 2,549,700,000 (US \$ 1,097,589), flew into the local economy **indirectly** through the hospital. This is the money spent, locally, by out- and in-patients and by the students of the hospital schools. It does not come *from* the hospital, like salaries or local purchase of supplies, but it is spent locally because of the hospital presence.

This gives an estimated total financial flow into the local economy, from and through the hospital, of USh 4,985,425,128 (US \$ 2,146,115).

Finally the **induced** economic effects of the new money coming into the local economy from the hospital was estimated by calculating and applying an economic multiplier using the same formula used in 2003 although with different parameters. By doing this, it was estimated that 1 USh injected from the hospital into the local economy, through successive transactions, generated 1.6 USh. This means that the new money injected into the local economy not only increased its size directly but, also, produced an additional wealth equal to about 60 %of its initial value. The new money generated through this “ripple effect” in the FY 2010/2011 was estimated at USh 2,284,655,791 (US \$ 983,494).

This leads to a total estimated contribution of Lacor Hospital Complex to the local economy of USh 7,270,080,919 (US \$ 3,129,609) in the FY 2010/2011.

As in all the studies tackling economic issues, several assumptions were made and these are debatable.

There are important changes in the way the surrounding communities perceive the Hospital and its role in the changed and changing environment.

Its economic and social importance is still felt and acknowledged but, side by side with the appreciation of its positive role, criticism and complaints were also voiced. Criticism and complaints unheard in 2003.

Due to the normalizing situation in the area, the hospital does not have to play, anymore, the role of “sanctuary”. Therefore, it is seen, more and more, as a “simple” health care delivery institution. As such, its perceived health care delivery problems are openly criticized: from long waiting times to harsh treatment of patients, from preferential treatment granted to personnel friends to scarcity of qualified staff.

Even in the perception expressed by the hospital personnel there were more bitterness and criticism, towards the hospital management than in 2003. Given the undeniably low salaries of about 50% of the hospital personnel and the sky-rocketing prices of food items in particular and of the cost of life in general, bitterness and criticism are understandable.

Unlike in 2003, this study does not produce any “recommendation”. The Management of the Lacor Hospital Complex will have to utilize the results of this study the way they see adequate.

01. Introduction

The “health care industry” includes a variety of different businesses: from health care delivery to health training, from pharmaceuticals and equipment manufacturing and selling to health insurances.

The contribution of hospitals to the general economy is usually, and narrowly, considered in terms of diseases prevented and health restored.

Yet health units, especially hospitals (for their bigger size) are important economic actors in the areas where they operate.

Studies on the economic role of hospitals have been carried out especially in the United States (HANYS, 2010, Illinois Hospital Association, 2010, Katherine Shaw Bethea Hospital, 2010).

The only study on the economic importance of a hospital in an African setting was carried out in 2003 and concerned St Mary’s Lacor Hospital, in Gulu District, Northern Uganda (Everd M et al, 2003).

In 2011 the Lacor Hospital Complex Management requested a follow up study to the one that was conducted in 2003, to update and, possibly, deepen the knowledge and understanding gained in the previous study. Many things have changed since in Gulu District. The most important change is that peace and security have been restored to the area. This led, among others, to the return back home of many formerly Internally Displaced Persons (IDPs), to freedom of movement and to increased economic activity.

Part of what was Gulu District in 2003 constitutes, today, the new Districts of Amuru and Nwoya. A new country, South Sudan, was born in July 2011, roughly 100 kilometers away from the hospital. Commercial exchanges between Uganda and South Sudan are already intense and, if peace holds in South Sudan, they are bound to grow. Lacor Hospital is located along the main road leading to South Sudan and the many vehicles transporting goods and passengers often stop at the trading centre in front of the hospital stimulating the local economy.

02.1 Uganda: Historical and political overview

The National Resistance Movement (NRM) led by President Yoweri Museveni, has been in power since January 1986.

As a geographical expression, Uganda was invented by the British towards the end of the XIX century. It locked, into the same administrative territory, areas inhabited by people with different cultures, traditions, and political setup. In the south were old and well established monarchies while in the north were societies loosely bound, administratively less structured and without permanent chiefs.

Uganda became independent on October 9th 1962 with an anomalous structure. It was supposed to be one state with; in the south, four kingdoms endowed with a fair degree of autonomy and, in the north, several dissimilar districts, little organized and with a certain degree of autonomy. The king of the largest Kingdom, the Kabaka of Buganda, was made President of Uganda. In April 1966 the then Prime Minister, Apollo Milton Obote, took power overthrowing the President, and suspending the Constitution. This started a long series of *coups d’état*. Five years later Obote himself was overthrown by his Army Chief of Staff, General Idi Amin Dada. In little more than eight years, hundreds of thousands of people were killed (the estimates go from 300,000 to 800,000). Amin was over-thrown after a brief war with Tanzania (October 1978-April 1979). His fall did not take the country out of the abyss. Thanks to elections that most thought and still

think were rigged, Obote came back to power in 1980. Again, he was overthrown by his Army Chief of Staff, this time General Tito Okello, in 1985. In 1981, Yoweri Kaguta Museveni started a guerrilla war. He took power in January 1986. Slowly, Museveni managed to get most of the country back to normality.

For more than 20 years the North, especially the Acholi Region (from the name of the main ethnic community inhabiting it), was ravaged by a guerrilla waged by the Lord's Resistance Army (LRA) led by the elusive Joseph Kony. In 2005 the International Criminal Court issued arrest warrants for Kony and five other LRA commanders. Peace talks between the government and the LRA led to a ceasefire that came into force in August 2006. A permanent ceasefire was agreed in Juba, South Sudan, in 2008 but Joseph Kony did not show up to sign it. Since the second half of 2007, the LRA moved its troops and its human rights abuses, to an area at the borders between Central African Republic, Democratic Republic of Congo and South Sudan. This meant the beginning of a period of peace in the Acholi Region and the return to their homes of about two million Internally Displaced People (IDPs). Some of them had lived in squalid camps for more than ten years.

In 1995 a new Constitution was approved. President Museveni got his first democratic mandate in elections held in 1996. He got his second mandate in 2001. In 2005 a popular referendum approved the return to multi-party politics. The Constitution was amended and the limit of two presidential mandates was abolished. President Museveni was elected again in February 2006 and in February 2011. Next presidential elections are scheduled for February 2016.

02.2 The economy

In 2007, viable reserves of oil were discovered in the West of the country, on the shores of Lake Albert. It is estimated that they contain the equivalent of about 2 billion barrels of oil (National Planning Authority, 2011). An understandable degree of euphoria has been accompanied by a series of disturbing allegations of corruption levied against prominent political figures. Transparency International ranked Uganda 127th out of 178 countries studied for its 2010 Corruption Perception Index (Denmark ranked N° 1, as the least corrupt country in the world and Somalia ranked 178th) [Transparency International 2010]. Oil production is not expected to reach the targeted 200,000 barrels per day before the FY 2015-2016. After 20 years of macroeconomic stability the oil revenues could represent a challenge as much as a bonus. The energy budget is forecasted to triple in the FY 2011-2012 because of the planned construction of an oil refinery, an oil distribution network and hydroelectric power projects. The Economist Intelligence Unit estimates the 2011 GDP at US \$ 17,261, the GDP per person at US \$ 495, the real GDP growth at 5.6% in 2011 and at 5.1% in 2012 (EIU, 2011). Growth seems to be mainly sustained by the service sector followed by transport, communication and construction.

About 96% of goods and 95% of passengers move on roads; rail, water and air transport play a marginal role. The road network is estimated at 78,100 Km, only about 4% of it paved (National Planning Authority, 2011). Agriculture employs 70% of the population but its output, heavily dependent on weather conditions, has been stagnant for some time and its contribution to GDP is declining. About 58% of the arable land is currently cultivated (National Planning Authority, 2011).

The annual general inflation rate, in October 2011, was estimated at 30.5%. The inflation rate of food crops was estimated at 33.6% in August 2011, raised to 38.8% in September 2011 and decreased to 35.3% in October 2011 (Bank of Uganda, 2011 A).

The rapid and significant price increase of basic food items is a major problem and led to violent protests in the streets of the capital and elsewhere in the country.

A prolonged drought that affected most food producing parts of the country since the onset of 2011 has been indicated as one of the major causes (Bank of Uganda 2011 B). Significant exports of food crops, especially to South Sudan, are an important contributing cause.

In 2010/11, the Uganda Shilling depreciated by 14.5 percent against the US dollar to an annual average exchange rate of Shs. 2,323.4/US\$ (Bank of Uganda, 2011 B). In October 2011, US\$ 2,599.90 was necessary to buy one US\$ (Bank of Uganda 2011 A). The proportion of the population living with less than one US \$ per day declined from 56% in 1992 – 1993 to 31% in 2005 – 2007 (National Planning Authority, 2010).

The latest UNDP World Human Development Report ranked Uganda 161st out of 187 countries studied. According to the same Report, in 2009 Foreign Direct Investment in Uganda represented 3.8% of GDP, Official Development Assistance 11.4% and migrants' remittances 4.7% (UNDP 2011). The World Bank estimates the Official Development Assistance to Uganda at US \$ 52 per person in 2008, slightly above the Sub Saharan average of US \$ 49 per person (World Bank, 2011).

02.3 Demographic and health indicators

The last National Census was carried out in 2002 and next one is planned for 2012. The currently used population figures are based on projections from the 2002 census.

The total population, in mid-2011, was estimated at 33 million, 56% of it below 18 years of age; the total fertility rate is 6.7; 15% of the population lives in urban areas; while the general annual population growth rate is 3.2%, the urban population annual growth rate is estimated at 14.8% (Population Secretariat, 2011 A). If the current annual population growth rate does not change, the Uganda population would reach 103.2 million by 2050 (Population Secretariat, 2011 B). Data collected for the period 2002-2006 put the infant mortality rate at 76 / 1000 live births and the under-five mortality rate at 137 / 1000 live births. The maternal mortality ratio, calculated for the period 1997 – 2006 is 435 / 100,000 live births (Ministry of Health, 2011).

02.4 The Health System

The Uganda National Health System is divided into Districts and Sub-Districts. While the districts host a local government, the sub-districts (often corresponding to constituencies) do not. The health units are organized in a pyramid, with Health Centres I (HCI) at the base and National Referral Hospitals at the top.

The Health centres I (HCI) do not exist as physical structures. In theory, they consist of Village Health Teams and Community Health Workers delivering mainly promotive and preventive services. The Health Centres II (HCII) are 3,006 and provide promotive and preventive services, out-patient services and antenatal care. The Health Centres III (HCIII) are 1,082. They deliver the same services of HCII with, in addition, assistance to deliveries and in-patient beds. Health Centre IV (HCIV) are 177, have (or should have) a working theatre where caesarean sections and other non-complex surgical interventions can be carried out. The General Hospitals, rural and district ones (114) deliver a wider range of surgical interventions and have a larger number of beds (ranging from about 100 to about 150). The Regional Referral Hospitals (13) deliver specialist services and the National referral Hospitals (two), deliver highly specialized services and are involved in university teaching and research. They are both in the capital city and one of them is a

psychiatric hospital. The above data on numbers of units come from the “*National Development Plan 2010-2014*” (National Planning Authority 2010) and the “*Annual Health Sector performance Report 2010-2011*” (Ministry of Health 2011). Many of the newly constructed units, especially HC IV, are not functional because of lack of staff and equipment. In practice, the range of services delivered varies significantly and is dependent on the personnel available and their competencies and attitudes, the equipment available, the conditions of the infrastructure, irrespective of their level. About 25% of health units (40% of the hospitals) belong to the Private Non For Profit (PNFP) sub-system, mainly managed by the Anglican and Catholic Churches.

There also is a significant and increasing Private For Profit (PFP) sub-system. It is very difficult (if at all possible) to quantify the sub-system accurately. The PFP structures go from hospitals delivering good quality services (mainly in big cities) to “clinics” delivering services that vary a lot in range and quality, to regularly registered and licensed pharmacies to mushrooming “drug shops” selling drugs of dubious quality and equally dubious origin. Drug shops are numerous in rural as well as in urban areas. Especially for the poorest strata of the population and when health problems are not perceived as serious (at least at their beginning), drug shops constitute the first level of contact with the health system. The reasons are evident: they are many, are near, there are no queues, there are no “consultation fees”, one can obtain drugs without any prescription, and one can obtain drugs depending on the amount of money available, even if they are not the right ones and even if they are not enough for a complete treatment (Odaga et al, 2004). The damage for the health of individuals and of entire communities is clear but, apparently, the government lacks the capacity of regulating this sector.

02.5 Utilization of health services

Out-patients visits decreased during last financial year while the utilization of other services increased. According to the latest Annual Health Sector Performance Report (AHSPR) there were, in the year 2010-2011, 34.9 million of out-patients visits, down from 36.8 million the previous year. This gives about 1 out-patient visit per person per year. About 39% of deliveries took place in health units, up from 33% the previous year. The coverage with the pentavalent vaccine was 90%, against 70 % in 2009-2010 and the coverage for measles vaccine was 85% against 72% the previous year (Ministry of Health, 2011).

02.6 Human resources for health

Uganda has 37,368 health workers of which 24% are nurses, 12% midwives and 3% are doctors. Nursing Assistants, with little formal training, constitute about 17% of the total health workforce. Only about 56% of the approved posts in the Uganda government health units are currently filled (Ministry of Health 2011). There are four Faculties of Medicine, one is private and three belong to the government. One of these is in Gulu. There are several private Nursing Schools. The quality of their teaching is doubtful and many are operating without a proper license. The Minister of Health has recently declared that there are at least 2,000 “quack nurses” operating in private as well as in government facilities, trained by the “... *mushrooming illegal nursing schools in the country*”. The Minister of Health also said a validation exercise will be carried out “... *to rid the health sector of illegal practitioners*” (New Vision, 2011).

02.7 The pharmaceutical sub-sector

A medicine availability survey carried out in August 2011 found that only 43% of government health units did not run out of six essential medicines used as tracers in the six months before being surveyed. The six

tracer medicines include measles vaccine, oral rehydration salts, depo-provera, Sulfadoxyne-pyrimetamine, first line antimalarials and cotrimoxazole (Ministry of Health 2011). Anecdotal evidence and key informants statements suggest that the stock-outs of essential medicines are a major problem for the majority of health units. This is also suggested by the fact that households, the biggest contributors to the national Health Expenditure (NHE), spend 58.4% of their health expenditure to buy medicines (Ministry of Health, 2007). They do so mainly from private pharmacies, drug shops, roadside drug stalls and other outlets of dubious quality. The purchase of medicines absorbs the biggest part of the National Health Expenditure (NHE), that is, about 29.5% (Ministry of Health 2007).

02.8 Health Financing

Like all poor countries, Uganda has a health system very negatively affected by gross underfunding. The current cost of delivering an essential package of health services in Low Income Countries is estimated at about US \$ 44 per person per year and should rise at about US \$ 60 per person per year by 2015 (WHO 2011). The cost of delivering the Uganda National Minimum Health Care Package (UMNHCP) was estimated at US \$ 41.2 in 2008-2009 and US \$ 47.9 in 2011-2012 (Ministry of Health 2010).

The latest National Health Accounts report, related to the financial year 2006-2007, estimated the NHE at about US \$ 33 per person per year. This includes the contributions from all sources, public, private and donors. It represents about 8.2% of the country GDP. The biggest proportion of the NHE, about 50%, is represented by out of pocket (OOP) expenditures coming from households (about US \$ 16.5 per person per year). Donors financed about 35.1% of the NHE (about US \$ 11.6 per person per year), the government 14.4% (about US\$ 4.7 per person per year) and international NGOs 0.4% (about US \$ 0.1 per person per year) [Ministry of Health 2007]. About 87% of the government health expenditure goes to salaries and wages.

The highest proportion of the NHE (29%) goes to private pharmacies and drug shops; public providers get about 24.5% of the NHE, PFP get about 7% and PNFP about 6.9% (Ministry of Health, 2007). Households spend the greatest proportion of their OOP (58.4%) to buy medicines and the remaining 41.6% to pay for curative services.

02.9 Hospitals

Official estimates have 72% of the Uganda population living within five Kilometers from a health unit (Ministry of Health 2011). Actual access to adequate health services, however, is much more limited than one could think on the basis of this geographic indicator. The delivery of services is, in fact, significantly hampered by poor infrastructure, inadequate staffing, inadequate equipment and frequent stock-out of medicines (Ministry of Health 2010 B).

There are 143 Hospitals in the country: 66 belong to the government, 61 are PNFP and 16 PFP. Thirteen of the Government Hospitals are Regional Referral Hospitals. In the Annual Health Sector Performance Report 2010/2011, the activities of four big PNFP hospitals (Lacor, Mengo, Nsambya and Rubaga) are analysed together with those of the Regional Hospitals (Ministry of Health, 2011).

03.1 Gulu District

Having been, for about 20 years, the epicenter of the LRA insurgency, Gulu District is slowly recovering and trying to get back to normal life. Its economy is based on agriculture that employs about 95% of its estimated 385,600 people (Uganda Bureau of Statistics, 2011). Gulu Municipality, with an estimated 119,430 inhabitants, is the third urban agglomeration of Uganda, after Kampala and Kira Town Council, in Wakiso District (Uganda Bureau of Statistics, 2011). The population annual growth rate is 2.9%, slightly below the national average. About 87 % of the district land is arable but less than 15% of it is actually cultivated. During the insurgency more than 80% of the rural households could not carry out any agricultural activity. After a few years of peace the economy seems to be growing: *“Gulu District entered a new era of peace and this has led to a tremendous trade boost in the district and across to Southern Sudan. Manufactured merchandise, agricultural produce and products dominate the trade”* (Gulu District, 2011). Between 2006 and 2010, hotels have increased from 4 to 13, guest houses from 44 to 98, small scale industries from 56 to 107 (Gulu District, 2011). The proportion of the population living below the poverty line decreased from 65% in 2005/2006 to 53% in 2009/2010 (Gulu District, 2011).

Gulu District is divided into two Counties and one Municipality. The Counties are divided into 12 Sub-Counties and 53 Parishes, the Municipality has four Divisions with 16 Wards. The Villages are 342.

Like virtually all the 112 currently existing Ugandan districts, Gulu gets the greatest share of its revenue from the central government. In the FY 2009 – 2010 (the last for which complete data were available at the time of the study) the district total revenue was 21,063,191,000; local revenue only represented 2% of it, central government grants 90% and donors funds 8% (Gulu District, 2011).

03.2 Gulu District Health Indicators

The “Gulu District Health Sector Development Plan FY 2011/12 – 2015/16” reports health indicators some of which are patently wrong while others are not credible. For the year 2010/2011 the infant mortality rate is reported to be 40/1000 live births, down from 172 / 1000 the previous year, the maternal mortality ratio is reported to be 251 / 100,000 live births, down from 354 / 100,000 the previous year, the under-five mortality rate is reported to be 177 / 1000 live births, unchanged from the previous year (Gulu District Health Office, 2010). Similar improvements in just one year are, simply, impossible. Furthermore, obviously, the under-five mortality rate could not remain unchanged if the infant mortality rate had decreased.

03.3 The district health system

Gulu Health District includes the two Health Sub-Districts of Aswa and Omoro and Gulu Municipality. There are four hospitals: Gulu Regional Referral Hospital (managed by the central level), St Mary’s Lacor Hospital (belonging to the Gulu Archdiocese), Gulu Independent Hospital (Private for Profit) and the Military Hospital. In addition, there are two Health Centres IV, 14 Health Centres III and 48 Health Centres II. One Health Centre III and seven Health Centres II are either under construction or being rehabilitated.

Efforts to get information from Gulu Independent Hospital proved futile with the management stating in writing, in an email, that the hospital is not part of the Gulu District Health System; which was surprising given that the hospital received in the FY 2010/2011, US\$ 64 million from the Uganda Government as part of the government’s contribution to PNF facilities.

The District employs 432 people in the health sector; of these, 41% are trained health workers and 59% are support staff (drivers, nursing assistants, porters, ecc.) [District Health Office, 2011].

03.4 The district health budget

According to the “2010/2011 District Health Sector Annual Report” the FY budget was US\$ 4,909,424,963; at the end of the FY US\$ 4,703,338,000 (96%) was actually spent (Gulu District Health Office, 2011). The budget of Gulu Regional Referral Hospital, in the FY 2010/2011, was US\$ 2,807,000,000 (US\$ 807,000,000¹ for recurrent costs and US\$ 2,000,000,000 for capital costs). Since the Regional Hospital is autonomous and receives its funding directly from Central Government, its budget is not part of the District one.

04.1 St Mary’s Hospital Lacor

Founded in 1959 by the Comboni Missionaries, St Mary’s Hospital Lacor (often just called “Lacor Hospital”) is today the largest Private Not For Profit health institution in Uganda, with 482 beds and 564 employees. What is called “Lacor Hospital Complex” includes the Hospital, a Laboratory Training School, a Nursing Training School as well as the three Health Centres of Amuru, Opit and Pabbo, founded in the 70s and still funded and managed by the Lacor Hospital Complex. In addition, the hospital is a teaching site of the Faculty of Medicine of the University of Gulu and of the School for Anesthetic Officers of Mulago Hospital, one of the National referral hospitals in the country, located in the capital Kampala.

The **Hospital workload** is high even if it decreased during last FY. The hospital received 184,934 out-patients in the FY 2009/2010 and 166,683 in the FY 2010/2011, a decrease of 10%. The in-patients were 39,273 in 2009/2010 and 26,396 in 2010/2011, a decrease of 33%. The most significant decrease in admissions, has been experienced in the paediatric and general medicine wards, 54% and 21% respectively (from 22,097 to 10,271 in the paediatric wards and from 5,460 to 4,295 in the general medicine ward). The other departments did not experience significant changes (Lacor Hospital Complex 2010, Lacor Hospital Complex 2011).

The “*St Mary’s Hospital Lacor Annual Report*” for the FY 2009/2010 records a 16% **attrition rate** for the hospital staff. This included staff members who were laid off for different reasons as well as those who retired or resigned (Lacor Hospital Complex, 2010).

For the FY 2010/2011 the staff members who left the Hospital were 39. Of them, 10 were doctors. Out of a total of 36 doctors, this gives a specific attrition rate of 28%. Of the doctors who left, two went to work with the government, one joined a private for profit hospital in Kampala, one went to work with an NGO, two went for self-sponsored further studies, two went to work abroad (one in Australia and one in South Africa) and for one there is no information.

As for nurses, enrolled and registered combined, 19 left out of 142, with a specific attrition rate of 14%.

In the FY 2009/2010, a study carried out in 65% of the PNFP health units in Uganda revealed an overall attrition rate of 20% in hospitals and 22% in lower level health units (Ministry of Health 2010).

04.2 Lacor Hospital as a training place

Lacor Hospital Complex is and is seen to be an important training place, not only in the health field. We already mentioned the schools attached to the hospital and the collaboration between Lacor Hospital, Gulu University and Mulago Hospital.

¹ This amount excludes salaries that are paid, separately, by the central government.

In the course of the FY 2010/2011, Lacor Hospital funded further training for 38 personnel members. Some of them study in the schools attached to the hospital, others in other parts of the country.

The importance of Lacor Hospital as a training place goes beyond the health field. Many lay workers learn professional skills that can be used elsewhere to make a living. These skills go from brick making to mechanics, from tailoring to cooking and others.

The hospital has a list of about 70 casual workers who are often but not permanently employed for construction and maintenance works. When they don't work for the hospital, they can use their acquired skills elsewhere. During the years, dozens of workers have gone through this "*learning by working*" process. It was not possible to assess it in quantitative terms but its overall importance is obvious and recognized as such by the community as reported in the focus group discussions held with community members.

04.2.1 Lacor Hospital Schools

Two Schools are attached to Lacor Hospital: a School for Laboratory Technicians and a Nursing School. The Course for Laboratory Technicians lasts two years.

The Nursing School runs two courses: one for Enrolled Comprehensive Nurses (ENC), lasting two and half years, and one for Registered Nurses, lasting one and half year. Fees vary according to the payer: for the ENC course self-sponsored students now pay an average of USh 1,150,000 per semester, Institutions sponsoring students pay USh 1,900,000 and foreign students pay US \$ 1,150 per semester. The fees for Registered Nurses pay USh 1,550,000 for self-sponsored students and 2,450,000 for Institutions sponsored students. In June 2011 the School had 199 students.

Currently (Oct. 2011) the School for Laboratory Technicians has 36 students enrolled in the first year and 28 enrolled in the second. The students were 51 in total in the FY 2010/2011. As an average, the fees amount to USh 800,000 per semester if the student is self- sponsored and Ush 1,200,000 if the student is sponsored by an institution.

Finally, the course for Anesthesiology Technicians lasts two years and, currently, is attended by nine students.

In all the three courses, in addition to the full time teachers, hospital personnel take part in teaching.

05.1 The 2003 study on “*The economic impact of Lacor Hospital on the surrounding community*”

In 2003 the Lacor Hospital Complex Management asked the Faculty of Health Sciences of Uganda Martyrs University (UMU) to carry out a study on “The economic impact of Lacor Hospital on the surrounding community”. This was carried out by six participants in the “Master of Science in Health Service Management” and two of the Department lecturers (UMU, Department of Health Sciences, 2003). The findings were, then, summarized in an article published in the Faculty Journal, “Health Policy and Development” (Everd M et al, 2003). The study analyzed data related to the Financial Year (FY) 2001/2002.

In 2003 Lacor Hospital was the largest employer in Gulu District. The total income of the Hospital was Uganda Shillings 4,506,885,000. About 13 % of this was raised locally, mainly through user fees. The remaining 87% came from outside Gulu District: 12 % from the Government of Uganda and 75% from Donors. All in all, the hospital spent about 52 % of its revenue within Gulu District, through salaries, wages, allowances and purchases from local suppliers.

About 96% of the salaries and wages earned by the hospital staff were spent on school fees and feeding. Eighty one percent (81%) of the school fees was paid to schools in Gulu district, the rest being spent on house rent, construction of personal houses, other needs like clothing and savings (3%). Only 1% made their purchases from Kampala, the rest buying from Lacor centre (54%), Gulu town (41%) and Gulu suburbs (4%). At least 85% of what Lacor Hospital spent on salaries, wages and allowances was retained and injected into the Gulu District economy: about 1,170,033,627 Uganda Shillings out of 1,376,510,150 Uganda Shillings. Of the 705,732,000 spent on supplies, goods and services, 429,741,950 (61%) was spent within Gulu District (Everd M et al, 2003).

06.1 The present study

The socio-economic environment in which Lacor Hospital operates has changed remarkably in the last few years. Peace is now prevailing in the whole region. Gulu Municipality, with a population reaching 119,430, is now the third largest conglomeration of people in the country (Uganda Bureau of Statistics, 2011). Trade with neighbouring South Sudan is thriving. This youngest African country has already replaced the European Union as the major trading partner for Uganda. A small town has grown in the meantime around the Hospital and, while the bulk of the population remains very poor, an affluent middle class is developing and growing. In the past Lacor Hospital was the only sizeable employer in the area and the local economy was substantially depending on it.

This study intended to determine if this is still the case. Its aim was to quantify the amount of financial resources attracted into the area by the hospital and its contribution to the local economy through direct, indirect and induced effects.

The direct effects are due to the injection of funds into the local economy by the hospital through payment of salaries and local purchases of goods and services.

The indirect effects are due to the funds injected into the local economy by patients, students and visitors coming to the hospital.

The induced effects are linked to the changes created in the local economy by the injections of funds mentioned above: support and stimulation of local businesses, attraction of new economic actors, increased commercial exchanges, etc.

The results of this study could be of use in the process of preparing the new Hospital Strategic Plan for the period July 2012 to June 2017.

06.2 The study objectives

This study intended:

1. to quantify the amount of the financial resources attracted by the hospital and flowing, from it and through it, into the local economy
2. to assess the relative importance of these resources for the economic activities thriving in the area surrounding the hospital
3. to understand how the communities surrounding it, perceive and see the hospital not only in its obvious role as an institution delivering health services but as a community resource
4. to understand how the hospital personnel perceive the hospital as an institution delivering health services, as a place of work and as a resource for the community
5. to compare, when appropriate, the results obtained today with those obtained seven years back
6. to determine any significant change in the “ripple effect” quantified by the previous study

The study also intended to carry out similar investigations and achieve similar objectives in the three satellite health centres of Amuru, Opit and Pabbo.

06.3.1 Methodology

The study objectives were pursued through:

- analysis of hospital records
- interviews to personnel, patients and patients-care-takers of the hospital and of its three satellite health centres
- interviews to the owners, managers and customers of the small businesses surrounding the hospital and its three satellite health centres
- interviews to the owners of the major suppliers of Lacor Hospital in Gulu
- interviews to key informants in the Hospital and the Administrations of the two Districts of Amuru and Gulu²
- focus Group Discussions (FGD) with the communities around the hospital and the three health centres and with various groups of the hospital personnel
- formal and informal discussions with all the groups of respondents mentioned above
- personal observations

The study team was made of one Lacor Hospital Complex employee, three external researchers and three data collectors. Two of the external researchers and the three data collectors originate from Gulu District, know the area and have the local language (Acholi) as their mother tongue. Data collection took about three weeks.

² The two Health Centres of Amuru and Pabbo are now part of the new District of Amuru, carved out of Gulu District in 2006

The sample sizes of the various groups of respondents were calculated using the Cochran formula on the basis of assumptions that were thought to be adequate. For details on the calculations and the determination of the sampling sizes, see Annex III.

In 2003, employees of the hospital suppliers located in Gulu were interviewed and their spending patterns analyzed, as if their salary significantly depended on the transactions between their employers and Lacor Hospital. Since this is not the case, and since the few that the study team tried to interview were reluctant to answer, the team did not interview them this time.

The team interviewed a sample of out-patients and a sample of in-patients care-takers to try and quantify how much they spend in the nearby trading centre. This was not done in 2003. The study team thought that the amount of money flowing from these patients to the local economy could be significant. Since this flow would not be there if it were not for the hospital's presence, the team decided to investigate it.

The study team often converted amounts expressed in Uganda Shilings (USh) into United States dollars (US \$) using the average exchange rate for the FY 2010/2011 provided by the Bank of Uganda, that is, USH 2,323 for 1 US \$.

06.3.2 Methodological issues for the determination of the ripple effect

The study proposal hinted at the possibility of determining “... *if there is any significant change in the “ripple effect” quantified by the previous study*”. The 2003 study did not attempt to calculate ripple effects using income multipliers (Uganda Martyrs University, 2003). The article based on the study attempted to do it (Everd M, 2003).

When new income comes into a given economic stream, it will pass through the hands of several successive consumers, portions of it being re-spent several times in the local economy and portions of it leaving the local economy to be spent somewhere else.

An income multiplier allows estimating the total economic impact of new income into a local economy. A commonly used formula is the one proposed by Coppedge in 1970, brilliantly and concisely revisited by Crawford in 2011: $1/1-(x)(y)(z)$ (Coppedge and Youmans, 1970, Crawford, 2011). Where:

- x is the percentage of new income that a consumer (in our case Lacor Hospital Complex) has spent rather than saved in the period under study. The Lacor Complex funds coming from outside Gulu District were treated as “new income”.
- y is the percentage of consumer expenditures made within the local economy. In our case, this was the percentage of Lacor Hospital Complex expenditures made within Gulu District.
- z is the percentage of business expenditures made within the local economy. In our case, the expenditures of the Lacor Trading Centre business owners made within Gulu District.

It was possible to determine x and y with a good degree of accuracy. For lack of records, the determination of z had to rely on interviews conducted with specific respondents and on some assumptions.

The 2003 article calculated z using the percentage of the salaries of the Lacor personnel and of the hospital suppliers' employees spent into the local economy. This would not be adequate today. About 20% of Lacor supplies are purchased within Gulu District. The amount of money involved may be considered significant (almost USH 900 million) but it is highly fragmented between numerous suppliers. The volume of business with Lacor is not particularly significant for any of the local suppliers. The salaries of their employees bear no relation with the commercial transactions of the suppliers with Lacor Hospital.

It would have been possible to adopt “ready-made” multipliers, as several studies on the economic role of hospitals do using income and job multipliers generated by the “... *widely-accepted input-output model known as “IMPLAN” to estimate the direct, indirect, and induced effects*” (Doeksen and St Clair, 2002, Doeksen, 2007, Illinois Hospital Association, 2010). The team chose not to do it since multipliers are influenced by local conditions and it seems arbitrary to use in Gulu multipliers identified in totally different contexts.

Given the different approach adopted in this study, our findings on the “ripple effect” should not be compared with the ones calculated in the article of 2003.

06.3.3 Limitations of this study

The team was unable to determine the business volume of the many informal exchanges thriving around the hospital not based in permanent facilities because of their irregular presence and the intrinsic difficulty of quantifying their volatile operations.

It was not possible to estimate neither the amount of user fees paid by patients coming from outside Gulu District nor the amount of school fees paid by students from outside Gulu District and attending the Lacor Hospital Schools. This led to an underestimate of the Lacor Hospital Complex income coming from outside Gulu District.

Many out-patients have to come back two or, at times, even three times before getting the results of all the examinations required for them. Each time they come back they spend money for transport and food. It was not possible to estimate the expenditures of the out-patients attending more than once for the same episode of disease. Similarly, the money spent for transport by the in-patients was not estimated.

When estimating the proportion of their salary spent by the Lacor Hospital Complex personnel within Gulu District, the study only considered expenditures for food and school fees. Since the personnel do not pay for health care, these are their most significant, regular and easily identifiable expenditures. The study did not investigate smaller and less regular expenditures made into the local economy by the Complex personnel.

All this probably led to underestimating the contribution of Lacor Hospital Complex to the local economy.

As it is often the case in economic studies (see Doeksen and St Clair 2002), because of the paucity and shakiness of the available data, the team had to make a few assumptions to calculate estimates which may be debatable. The assumptions made are clearly presented by the team and it is up to the reader to judge their adequacy.

06.3.4 Making rough sense of shaky data

We borrowed the brilliant title of this short paragraph from Pavignani and Colombo (2003). Dealing with inaccurate data, debatable projections, contrasting statistics, or, even, with outward lack of data, is common to many studies. In this study the team used a set of reliable data coming from the audited records of the Lacor Hospital Complex. To transform these data into information the team had to combine them with far less accurate data coming from other sources, local, national and international: from obscure small district or division hand written figures to glossy reports widely disseminated and often inappropriately credited with accuracy.

For instance, the 2011 World Development Report puts the Uganda 2009 GDP at US \$ 15 billion while the Economist Intelligence Unit Uganda Country Report of October 2011 puts it at US \$ 16.5 billion. The UNDP 2011 Human Development Report puts the 2011 Uganda total fertility rate at 4.9, while the State of Uganda Population Report, of the same year, puts it at 6.69; the former document puts the 2009 under five mortality rate at 128 / 1000 while the latter puts it at 137 / 1000. The list could continue.

As the title of this paragraph states, the study team hopes to have done just this: making rough (and hopefully useful) sense of the shaky data we have dealt with.

07. Findings

07.1.1 Lacor Hospital sources of funds

The study took into account the period, July 2010 to June 2011.

As Table 1 shows, the largest share of hospital funds (76%) comes from abroad (practically unchanged from the 75% found in the 2003 study). The most important financier is the Corti Foundation, contributing 35 % to the total. The Government of Uganda provided 8 % of the hospital funds. User fees constituted 12% of the total.

Source of Funds	Amount in USH	% of total income
Funds raised within Uganda		
User fees	1,303,152,000	12 %
Government of Uganda	849,690,000	8 %
School Fees	274,571,000	3 %
Miscellaneous ³	150,682,000	1 %
Total	2,578,095,000	24 %
Funds raised outside Uganda		
Corti Foundation	3,702,627,000	35 %
Catholic Relief Services	2,522,413,000	24 %
Italian Episcopal Conference	859,496,000	8 %
Other donors	997,368,000	9 %
Total	8,081,904,000	76 %
Total income for the Financial Year 2010 - 2011	10,659,999,000	100 %
Total amount expressed in US \$	4,588,893	

Table 1: Total Hospital Income in the Financial Year 2010/2011 by source (Hospital Records)

Funds coming from outside Gulu District are about **84% of the total**. They are the sum of the funds coming from outside Uganda and those provided by the Uganda Government, that is, US\$ 8,931,594,000 (US \$ 3,844,853).

Since many students and patients come from outside Gulu, even a proportion of user fees and school fees come from outside the district. Data on geographical origin are recorded but not computerized. It was thus not possible to identify what proportion of these fees is “new money” coming into the district, and the amount stated is an under estimation.

07.1.2 The Hospital User Fees

Lacor Hospital applies three different categories of fees:

1. Standard fee: these apply to out-patients and in-patients from the general public
2. Private fees: applied to:
 - a. individuals who want to receive services through the “private wings” of the hospital, with single or double rooms providing more comfort and privacy
 - b. individuals covered by insurance schemes
 - c. employees of other Institutions (and their family members)
3. Institutional fees: these apply to patients whose fees are paid by Institutions and NGOs serving the general population

³ These include the sale of old asset such as vehicles.

Private and Institutional fees were revised and increased in 2011. Standard fees, concerning the great majority of patients, have not changed since 2003. They are among the lowest charged by PNFP health units in Uganda and the majority of them are flat rates. Pregnant women and children under five only pay a flat fee of USh 1,000 (US\$ 0,4). The Lacor Hospital Complex employees and their immediate families are entitled to free health care. The fees charged by Lacor Hospital can be found on the hospital website.

In the financial year 2010/2011, user fees constituted about 12% of the total hospital revenue. This percentage remained virtually unchanged for the last five years (St Mary's Lacor Hospital, 2010). User fees represented about 12% of the total hospital income in 2003. According to WHO, health units recovering more than 18%-20% of the costs of services either are not used by poor households or push them deeper into poverty (WHO 2010).

07.2 Hospital expenditures

During the FY 2010/2011, the Lacor Hospital Complex spent a total of USh 8,526,341,170 (US\$ 3,670,401). About 45% of this total amount was spent within Gulu District, about 3% was spent outside Uganda and the remaining 52% spent in Amuru and Kampala districts. Table 2, below, summarizes the Lacor Hospital Complex expenditures for the FY 2010/2011

Item	Within Gulu District	Kampala	Amuru District	Abroad	Total
Net pay Lacor Hospital (Gulu District)	2,916,347,753				2,916,347,753
Net pay Opit HC (Gulu District)	63,200,340				63,200,340
Net pay Amuru HC, Amuru District			53,288,281		53,288,281
Net pay Pabbo HC, Amuru District			54,000,422		54,000,422
Net pay Mbuya Guest House (Kampala)		17,205,145			17,205,145
National Social Security Fund		533,456,050			533,456,050
Pay As You Earn		726,508,970			726,508,970
Local Service Tax	15,250,000	96,250	656,250		16,002,500
Medicines and other consumables	30,321,291	1,799,132,024			1,829,453,315
Food	209,398,125	4,200,000			213,598,125
Stationary	49,018,000	92,088,733			141,106,733
Fuel and spare parts	12,526,800	271,145,000			283,671,800
Construction materials	132,259,580	209,278,429		142,932,119	484,470,128
Non food items (blankets, bed sheets, soap, etc)	60,829,591	36,900,804			97,730,395
Services and assets	318,608,171	676,920,560		100,772,482	1,096,301,213
Total	3,807,759,652	4,366,931,965	107,944,952	243,704,601	8,526,341,170
Total Expressed in US \$					3,670,401

Table 2: Hospital expenditures in the FY 2010/2011. Source: Hospital records

07.3 Personnel related expenditures

The largest amount of money was spent on salaries, related taxes and contributions to the National Social Security Fund (NSSF): US\$ 4,735,646,828. This constitutes 55.5% of the total Lacor Hospital Complex expenditures for the FY 2010/2011.

About 0.6% of it was spent to pay the personnel working in the Lacor Guest House in Kampala; 3.4% was spent to pay the personnel working in Amuru and Pabbo Health Centres in Amuru District; 96 % was spent to pay the personnel working in Gulu District: Lacor Hospital (94%) and Opit Health Centre (2%).

The net pay taken home by the Lacor Hospital Complex workers, after taxes, was US\$ 3,104,041,941 (US \$ 1,336,221).

Table 3: Personnel related expenditures, showing NSSF contributions, taxes and net pay

Location	Gross salary	NSSF 10%	NSSF 5%	PAYE	LST	Net pay
Lacor Hospital	4,125,966,839	330,994,925	165,497,462	698,240,449	14,886,250	2,916,347,753
Opit HC	85,575,912	8,256,071	4,128,036	9,627,715	363,750	63,200,340
Amuru HC (Amuru Dist)	71,450,374	7,000,437	3,500,219	7,356,437	305,000	53,288,281
Pabbo HC (Amuru Dist)	73,803,830	7,188,283	3,594,142	8,669,734	351,250	54,000,422
Mbuya GH (Kampala)	23,212,506	2,197,651	1,098,825	2,614,635	96,250	17,205,145
Grand Total	4,380,009,461	355,637,367	177,818,683	726,508,970	16,002,500	3,104,041,941

07.4 Lacor Hospital as a tax payer and contributor to the National Social Security Fund

Of the total amount of funds paid by Lacor Hospital Complex for its workers, about 27 % was paid in taxes (PAYE and LST)⁴ and contributions to the NSSF. Of these, only the LST is retained locally: 65% of it goes to the Division of residence of the worker and 35% to her/his District of residence. According to data provided by the office of the Chief Administrative Officer (CAO), for the FY 2010/2011 the total LST collection of Gulu District amounted to US\$ 65,000,591 and the LST paid by Lacor Hospital workers was US\$ 891,250 (1.4%). According to Hospital records, however, the actual amount paid by Lacor Hospital workers was much higher: US\$ 15,250,000, of which, US\$ 5,337,500 million went to the District Administration and US\$ 9,912,500 went to the Division of residence of the individual workers.

The 2003 study on *“The economic impact of Lacor Hospital on the surrounding community”* found that Lacor Hospital employees were contributing 24% of the total Graduated Tax collected in Gulu District. Graduated Tax was abolished in the FY 2005/2006. The LST was introduced in the FY 2008/2009. Graduated Tax was paid by everybody while LST is only paid by people who are formally employed and is proportional to the income (the lowest contribution is US\$ 5,000 and the highest US\$ 100,000). LST leads to a much smaller collection than graduated tax.

⁴ NSSF, a mandatory contribution towards the workers pension, amounts to 15% of the gross pay: 10% paid by the employer and about 5% by the employee. PAYE and LST are paid by the employee and are proportional to the gross pay. The employer deducts PAYE and LST from the employee's salary and pays them to the Administrative Authorities.

In the FY 2009/2010 the Lacor Hospital Complex was the first contributor to the National Social Security Fund (NSSF) in Gulu District. In the FY 2010/2011 it was the second, the first being Gulu University that, in that FY, paid a significant amount of standing arrears.

07.5 Lacor Hospital: the major employer in Gulu District after the education sector

According to the records from Gulu District Administration, the Local Government employs 2,576 people (493 of them in the health sector), Gulu Municipality employs 192. The Education Sector, with 1,807 employees, is the biggest employer in the District. According to the District Development Plan, 1,197 people are formally employed in the private sector, 95% of them males⁵. Gulu Regional Referral Hospital, depending on central government, not on the local government, has 345 employees.

The Lacor Hospital Complex is the second biggest employer in the District after the education sector and the first one in the private sector. It has 614 employees, of them, 582 work in Gulu District (564 at the Hospital and 18 in Opit Health Centre);⁶ the remaining 32 work in Amuru District (16 in Amuru Health Centre and 16 in Pabbo Health Centre).

07.6 Purchase of supplies

The Lacor Hospital Complex buys various types of supplies to run its activities: from medicines and other medical items to food, from fuel to construction materials, from stationary to spare parts of vehicles and equipment, from toiletries to various types of services.

In the FY 2010/2011 the total amount of money spent by Lacor Hospital Complex to buy the needed supplies was USh 4,146,331,709, equal to US\$ 1,784,904.

About 20% of this amount was spent within Gulu District: USh 812,961,558, or US\$ 349,962. The bulk of the supplies was bought outside Gulu District, 74% in Kampala and the remaining 6% outside Uganda.

The 2003 study found that, in the FY 2001/2002, about 61% of what was spent by the hospital to buy supplies was spent within Gulu District. This difference is probably due to the fact that, in 2001/2002, there were more ongoing construction works than in 2010/2011 and the required materials were bought in Gulu. In addition, the Hospital management introduced new rules requiring that almost all payments must be made by cheque and, for each projected purchase, three different pro-forma invoices must be sought. Many suppliers in Gulu prefer to be paid cash because of the time taken to process cheques (about two weeks). In addition, the higher prices, found in Gulu for many items, make bulk purchases in Kampala more convenient for the hospital. Finally, due to its increasing level of sophistication, the Complex needs more and more products that are not readily available in Gulu.

At least 70 different suppliers were used by the Lacor Hospital Complex within Gulu District, none of them accounting for a particularly significant amount of money. The payments made to suppliers within Gulu District during the FY 2010/2011 ranged from about Ush 257,000 (US \$ 111) to USh 241,000,000 (US\$ 103,745). The biggest Gulu supplier of Lacor Hospital was Umeme, the company providing electricity. According to Umeme records, the amount paid by Lacor Hospital in the FY 2010/2011 amounted to 23% of its total income in Gulu for the same FY.

⁵ Page 71 of the District Development Plan.

⁶ In addition, there are 75 casual workers who are frequently, but not permanently, employed by the Hospital and five persons employed in the Lacor Logistic Office and Guest House in Kampala.

07.7 Lacor Hospital personnel spending patterns

The majority of staff spend most of their income to buy food and pay school fees. About 24 % of the interviewed personnel reported to have set up small business like retail shops, eating spots, bars and tailoring outlets to top up their income.

07.7.1 Where the money is spent

The answers obtained from the personnel interviewed revealed that about 84 % of them buy their food and other household appliances in the trading centre outside the Hospital (up from 54% in 2003). About 8% of them added that they sometimes buy supplies in Gulu town; 15% said they buy the majority of their supplies in Gulu town (down from 41% in 2003) and only 1% declared to buy their supplies outside Gulu (the same percentage as in 2003). The increase of those who buy exclusively in Lacor Trading Centre and the decrease of those who buy in Gulu town could be due to the fact that the trading centre is now bigger, more developed and, probably, better stocked. All in all, 99% of the respondents make their purchases either in Lacor or Gulu town.

07.7.2 What is spent to buy food

According to the findings, the median estimated amount of money spent by the hospital personnel to buy food in the FY 2010/2011 was US\$ 1,795,200. Assuming that the sample is representative of the whole of the 564 hospital workforce, we have a total amount of US\$ 1,012,492,800 equivalent to US\$ 435,855 spent by all the personnel to buy food. This roughly corresponds to 35% of the total net pay received by the Lacor Hospital personnel. This percentage was estimated at 37% in 2003.

About 11 % reported cultivating some land as a source of food and of some cash by small sales on the market. The median value of the percentages of their net pay spent by the personnel interviewed to buy food was 52%.

07.7.2.1 Food expenditures in the three Health Centres: an apparent paradox

When calculated the percentage of the net pay used to buy food by the personnel in the three health centres was found to be higher: 64% in Opit, 78% in Amuru and 71% in Pabbo even if the food is slightly cheaper there than in Gulu. This apparent paradox has some explanations: these workers belong homogeneously to categories having lower salaries among the Lacor Hospital Complex workers. In addition, many of them have a family in Gulu to take care of. Lastly, many men, being there without their families, often, if not always, eat in restaurants.

07.7.3 What is spent to pay school fees

Education, in Uganda, is given an enormous importance as it is suggested by the high number of private schools of all levels and by the 23 private universities. From the respondents interviewed at Lacor Hospital and in the three health centres, the expenditure for paying school fees came immediately after the one to purchase food. People pay school fees not only for their children but, very often, for other children in their families, either because their parents died or because they cannot afford to do it. About 9% of our respondents reported not to be paying school fees, some of them were religious persons, (whose salary goes to their congregations), others neither had children nor dependents. Of those who paid school fees, 69% paid them only within Gulu District, 6% only outside it and 25% within and outside Gulu District. Based on interviews conducted, the annual median of the amount paid for school fees was US\$ 1,075,000 for Lacor hospital complex. Since only 91% of the hospital 614 (559) staff pays fees, we estimated that, in the

FY 2010/2011 about US\$ 602,939,288 were spent to pay school fees by the Lacor Hospital Complex personnel. About 73% of this amount (438,675,250) was paid within Gulu District and about 27% (162,249,750) outside it.

07.7.4 Living and “hardly living” wages

In Lacor, as in any other large and complex organization, with a wide range of personnel categories with largely different qualifications and responsibilities, salaries range widely: from US\$ 161,000 to US\$ 5,336,727.

About 44% of the hospital personnel (249 out of 564) receive a salary ranging from US\$ 112,000 to US\$ 247,000. An additional group of 11 “part-time cleaners” receive US\$ 78,000 per month. This significant proportion of the hospital personnel, mainly made of non-qualified support staff, have obvious survival problems. Since they also have not only the right but, also the will to educate their children, they put in place various hard strategies to accomplish that; what elsewhere in this report, is referred to as “coping strategies”, a commonly used term; neutral, technical and euphemistic, that hardly conveys the harshness of the problems it embraces.

About 34% of the personnel (190 out of 564) receive a salary ranging from US\$ 418,000 to US\$ 488,000. The remaining 20% receive higher salaries.

07.7.5 Hospital loan schemes

Two formal interest-free loan schemes operate within Lacor Hospital. One is run by the “*Lacor Hospital Workers Saving and Credit Cooperative Society*”, a Cooperative officially registered in 1998. It manages a revolving fund initiated in 1998, with a grant of Uganda Shillings 150 million from the Italian Government. Only members of the Cooperative may obtain loans. Membership is open to all the hospital personnel. It requires the payment of a “once in a lifetime” contribution of US\$ 45,000 and an annual fee of US\$ 5,000. The current number of members is 419. To access a loan one must not have a pending debt with the Cooperative. The loan repayment is done through monthly salary deductions whose amount is agreed at the moment of applying. Since its inception, the Cooperative was disbursed loans to a total of US\$ 2,393,104,500. Slightly less than US\$ 11 million have not and will not be recovered because they are the “bad debts”, owed by people who left the hospital without reimbursing them. The Cooperative is managed by a Committee of seven senior staff members who sit every two months to examine the applications. The Committee members are not eligible to get loans from the Cooperative.

During the FY 2010 – 2011, the Cooperative issued 456 loans for a total of US\$ 285,715,000 (US \$ 122,994). The most frequent reason to ask for a loan was the payment of school fees; far behind, were the purchase of land and the construction or renovation of homes.

Several staff members declared they would not ask for a loan from the Hospital Cooperative because the process is too long and the amount given is rarely the one asked for. Exactly the same complaints were voiced in 2003.

A few staff members said they prefer to get loans from other cooperatives, the so called SACCOs (Saving and Credit Cooperatives) or from the Post Bank.

Strikingly, the study found that the majority of those who got loans from banks were convinced that they were being charged an overall 3% interest rate. As a matter of fact, the actual interest rate was around

30%. As everywhere, it seems that even in Gulu, banks do not shine for the clarity and transparency of their explanations.

In addition to the loan scheme, the *Cooperative* runs a saving scheme and a solidarity fund. For the saving scheme, USh 5,000 are deducted from the salary every month. Staff members can recover this money whenever they need it. The solidarity fund implies a monthly deduction of USh 1,000 and the money is used to help staff members who have to pay burial expenditures when they lose a close relative (parents, children, wife or husband).

Hospital staff whose salary is equal to or higher than USh 800,000 can obtain loans directly from the Hospital, without going through the Cooperative. In this case, a four members Committee (the three Directors and the Administrator) examine the applications and assess their eligibility. The mechanism for reimbursing the loan is the same as the one of the Cooperative.

07.7.6 “*Bol Ni Cup*”: informal loan and saving schemes run by the hospital personnel

Numerous informal loan and saving schemes are operating within the Hospital, founded, funded and run by staff members. They are called “*Bol Ni Cup*”, that means “*drop a little*” in the Acholi language. In almost all the hospital departments there is one of these schemes operating. They are reserved to hospital personnel and one staff member can be a member of one or more of them.

Some are just saving schemes, where members deposit amounts of money depending on their possibilities and, at the end of the year, they get back what they deposited.

Other schemes provide for saving and loans. They require members to deposit, either monthly or weekly, a certain amount of money (either fixed or variable) and allow members to get a loan that they have to reimburse within an agreed period of time (usually one month) with an interest (usually 10%). At the end of the year, members with no pending debts can get back what they have deposited, often with a small interest.

The majority of these groups function on the basis of rules that are unwritten but very effectively applied. One of them, with more than 30 members, has about USh 15,000,000 in its “coffer” (also an informal one) and lends money with a 10% interest rate. The repayment period is one month. If one fails to reimburse the loan, he/she will have to pay additional interests and/or a fine. Only small loans can be obtained but they are obtained quickly. The small size and informality of these schemes favors their swift functioning.

These *Bol Ni Cup* suggest the existence of a high degree of social cohesion and mutual trust. In the 2003 study there was no mention of the *Bol Ni Cup*.

07.7.7 More personnel members ask for loans today than in 2003

About 74 % of the personnel interviewed obtained loans from the Hospital. Once a loan is paid back, the person asks for a new one and the cycle continues. The main use of loan money is the payment of school fees (in 78 % of cases). Other uses of loan money are buying land, constructing a house or renovating it.

In 2002, the Cooperative had 257 members and 236 of them had asked and obtained loans in the FY 2001/2002. The Cooperative members represented about 50% of the total number of staff (excluding the then 145 casual workers). Those who obtained loans represented 92% of the Cooperative members and about 46% of the total staff members.

It is interesting to note that as reported above, the Cooperative has today, 419 members (68% of the total number of personnel, excluding the 71 casual workers) and that, in the FY 2010/2011, 456 loans have been obtained. This represents 109% of the total Cooperative membership: some members asked and obtained more than one loan during the same FY.

07.7.8 Personnel strategies to cope with hard times

Given the inadequacy of most salaries in relation to the high and increasing cost of life, several coping strategies are adopted by the Lacor Hospital Complex personnel.

About 24% of the interviewed persons have set up **small businesses** that help complement the meager income. Some of these are somehow formal businesses, from small restaurants to small retail shops. In the majority of cases, the “business” is much more informal: from road-side cooking spots to occasional tailoring to purchase and re-selling of some food items.

About 11% of the interviewed employees have **small plots of land yielding local produces** like cassava, potatoes, beans mainly used for family consumption and sometimes sold in the local market. This is not seen as an additional source of income but as a subsistence activity which is part of the normal economic life of a family⁷.

The **solidarity of an extended family** is still present and manifests in many cases. Family members help each other, when and how they can, to make ends meet.

Some of the respondents mentioned buying **on credit** at shops around the hospital. Being a Lacor Hospital employee seems to be taken as a sort of guarantee of payment, although delayed.

Another often mentioned coping strategy, if it can be referred to as such, is to eat **one meal per day** and **eliminate**, or drastically reduce, some items like sugar and meat.

Getting **loans** is another coping strategy already mentioned elsewhere in this document. Getting **salaries advances** is also common.

One constant complaint of lower cadres about the loans is that they are always lower than the amount requested. The idea that loans are tagged to the salary and, hence, to the proportionate possibility of paying back, does not seem to have been accepted by everybody.

In any case, many staff members resorted to getting loans from banks, mainly the Post Bank or other Cooperatives like SACCOs, because they lend higher amounts of money. The problem in this case is that they demand an interest rate of about 3% plus the Central Bank interest rate. As one respondent told us, “... *there isn't any optimal choice*”. Every adopted solution has its problem linked to it.

Included among the coping strategies is the setting up and adhesion to one of the *Bol Ni Cup* schemes informally run by staff members within the hospital.

⁷ Cultivating a small plot of land is so common as to be seen as “normal”. Many of the interviewed only mentioned it when specifically asked. They would not have mentioned it answering the generic question about “other sources of income”. For this reason, it is likely that the rate at which personnel actually practicing this activity is higher than the one detected by our questionnaires. Including a specific question about this activity would have been more appropriate.

With loans and salaries advances to be paid back, many of the staff members are engaged in an endless race where getting even and getting a balance between needs and financial means is an unachievable objective.

07.7.9 Personnel perceptions and opinions

During or at the end of each interview, interviewees were asked if they had questions or comments or observations on the study and its implications. Some of them did not want to add anything but the majority wanted to express their feelings. In addition, Focus Group Discussions were held with four different groups of personnel: nurses in charge of departments, nurses, nursing aides/assistants and non-qualified personnel.

Many asked if and how this study could help to improve their condition. The study team's response was that better understanding the importance of Lacor for the local community, beyond its obvious role as a health care institution, could guide the management, the authorities and the partners to make better informed decisions concerning the hospital itself. Such better informed decisions could and should be beneficial to all. Understandably, this was rarely taken as a satisfactory answer.

So, the interviewees went on articulating their perceptions. And these were confirmed and expanded in the FGDs. Below, we report the most frequently expressed and stressed considerations made by personnel.

The **inadequacy of the salaries** was very frequently mentioned as a serious problem, especially by the lower cadres. Looking at the salaries and the reported expenses for school fees and food requirements, this concern seems obvious and well founded.

The frequently reported perception that Lacor salaries are lower than government ones is contested by the Lacor Complex Management. According to it, salaries in the Complex are either equal or higher than government ones. Accurate comparisons, however, are difficult because of different contexts and schemes. Government provides for progressive salary increments coming with seniority (that is, the number of years served) and qualifications. In Lacor, the main criterion seems to be merit linked to the quality of performance, regularly assessed by internal and external auditors. It may so happen that a young in service registered nurse, whose performance warranted promotions, may earn more than an older ones in services whose performance has not been equally rated.

It seems obvious that the lowest ranks of the personnel, with low or no qualifications, have significantly less opportunities of promotion and consequently, of earning higher salaries. As for doctors and specialists, their salaries are usually, higher than those of doctors working in government institutions.

Another observation linked to the previous one concerns the **heavy workload** in the hospital as well as in the satellite health centres. This leaves little time for any other business that could complement the meager salaries. The comparison with government units, where the workload is much lower, was frequently made. On the other hand, many respondents linked the heavy workload to scarcity of staff and the **high attrition rate**, especially when it comes to doctors and nurses.

However, when asked why they would not leave Lacor and join the government health units, the most frequent answer was that in Lacor there is a *"sense of belonging"* and the *"awareness of delivering good quality services"*. One interesting statement was that *"if the quality of services in government units would improve, many people would leave Lacor and join the government"*. This is not the place to discuss the quality of services in Lacor or in government units. Neither is it the case of reflecting what it would take to improve the quality of government services. What matters is to observe that there is *"inner motivation"*,

the quest for a satisfaction that goes beyond material rewards, often found even where and when the so called “basic needs” are barely satisfied.

Many of the lower cadre employees, from nursing aides to plumbers, from tailors to masons felt that their voice is not listened to as much as the voice of upper cadres like doctors and other employees. They also **complained about attitudes towards them**. In a couple of cases the complaint went as far as stating that “... some administrators are rude and they under look us” or that “... they don’t treat us well because we are not as learned.”.

The Lacor Complex Management questioned some of the above reported personnel perceptions, especially those concerning salaries (perceived as lower in Lacor than in government health units) and workload. This suggests the need for a more frequent, regular and open discussion between Management and personnel.

07.8 Indirect Financial flows: going into the local economy through the hospital

The financial flows described below do not come directly from the hospital, as the ones described above. They go to the local economy through the hospital. They would not do so if it were not for the presence of the hospital.

07.8.1 Expenditures by the students of the Lacor Hospital Schools

The Schools full time personnel is included in the 614 total Lacor Hospital Complex personnel and their contribution to the local economy is considered in the section on personnel. The School fees have already been counted as part of the total Hospital income.

In addition, the study sought to know the contributions to the local economy made by the students. They have some pocket money and they spend it in the nearby market and trading center. Assuming that at least 90% of the students have pocket money and spend it in the Lacor Trading Centre, a sample size of 144 students was calculated. Of these, 122 students responded (29 from the Laboratory School, 87 from the Nursing School and six from the Anesthesiology School). The non-respondents were all from the Nursing school where, apparently it was more difficult to get hold of the students who were busy in class, in hospital wards or in the library. Given the homogeneity of the students concerning the parameter under study (pocket money and its use), the study team is confident that the non-response did not alter the reliability of the findings. The students were asked to fill a very short questionnaire. The important questions were three: *what is the average amount of pocket money that you spend in one term, what do you buy with it and where do you spend it*.

Findings revealed that all the students spend their pocket money to buy food, especially sugar, stationery, including photocopies, soap and other toiletries, and air time. They all buy these articles in the shops outside the hospital.

Sugar and food are also provided by the Schools but, apparently, not in sufficient quantities. Most students complained that since a few weeks, sugar was not any more available on the table but was directly put into tea and porridge. Apparently, most students found the amount put “at the source” not sufficient. Many also complained that the food was not varied and is not sufficient. Even the soap and the toilet paper provided were considered insufficient.

The range of the pocket money available per term went from US\$ 5,000 to US\$ 700,000; the average was US\$ 102,000 and the median was 50,000. Given the wide range, the median was taken as being more representative. One term lasts six months and there are two terms in one year. In the FY 2010/2011 the

schools had a total of 250 students (199 in the nursing school and 51 in the laboratory school). We can estimate that, in the FY 2010/2011, the students injected into the local economy about US\$ 25,000,000 (derived thus: 250 students * the median of US\$ 50,000 * 2), that is, about US \$ 10,762.

This relatively small contribution by the students is mainly due to two factors. On one hand, the schools provide most of the basic items like food and toiletries, even if many students complain that the amount provided is insufficient. On the other hand, the majority of the students come from poor families living in poor areas of the country (all the students interviewed hailed from Northern districts, among the poorest in the country). As the observations written by most students suggest, their families are already struggling to pay school fees and the pocket money they can afford to provide is, consequently very small. This financial flow was not calculated in 2003.

07.8.2 Expenditures by in patients and their care-takers

With the exception of malnourished children, the Hospital does not provide food to in-patients and each in-patient comes with at least one care-taker. Some of them bring food and drinks from home, many buy them at the shops in the outside trading centre. Depending on their length of stay, all of them end up spending some money in the trading centre.

Eighty three (83) caretakers of in-patients were randomly selected and interviewed from among the ones found in the hospital wards during the study. Among other things, they were asked where they were coming from and how much they spent on average every day in the trading centre outside the hospital.

The minimum reported amount of money spent daily was US\$ 400 and the maximum was US\$ 40,000. The average was US\$ 6,451 and the median was US\$ 5,000. Given the wide range of values, the team took the median as being more representative. Of the people interviewed, 45 (54%) came from outside Gulu District while 38 (46%) came from within Gulu District (three from Lacor area, 10 from Gulu Town and 25 from the wider District).

In the FY 2010/2011 the total number of admissions was 26,396 and the average length of stay 6.5 days. Multiplying the median of the reported daily expenditures by the number of admissions and by the average length of stay, the team assumed that the contribution of the in-patients and their care-takers to the local economy, in the FY 2010/2011, was US\$ 857,870,000 that is, US \$ 369,294.

07.8.3 Expenditures by out-patients

During the year 2010/2011 the hospital received 166,683 out-patients. Most of them come and go using local transport. Many buy some snacks and drinks when they arrive, before leaving, while waiting for the results of medical examinations and investigations. Others, again, buy something at the trading centre before going back home.

The team interviewed 144 out-patients on different days over a period of three days and at different times of the day. For food, drinks and other small items, findings revealed an average expenditure of US\$ 2,697 and a median of 2,000. The study team then, multiplied the median values for the total number of out-patients received by the hospital in 2010/2011 and obtained the total amount of US\$ 333,366,000 (US \$ 143,507).

As for transport, the study did not consider the money spent to come to the hospital by patients from outside Gulu since it was not paid to local transporters. However, the money spent to go back was considered since this is paid to local transporters. The average expenditure was US\$ 10,550 and the

median US\$ 8,000. Multiplying the median by the number of out-patients in 2010/2011 obtained the amount of US\$ 1,333,464,000 (US \$ 574,027).

Adding up the estimated total expenditures of out-patients for food and non-food items and for transport, the total amount is US\$ 1,666,830,000 (US \$ 717,533).

The 2003 study did not analyze the expenditures made by in-patients and their care-takers and by out-patients. This probably led to a considerable underestimation of the Lacor Hospital indirect contribution to the local economy.

The study team is aware that the assumptions on which calculations are based are debatable. However, the team also believes that the assumptions have an intrinsic logic and can give reasonable approximation to the reality.

Excluding the expenditures of out and in-patients could certainly lead to a significant underestimate of the financial amount of money flowing into the local economy because of the presence of the hospital.

07.9 The ripple effect

The ripple (or multiplier) effect of the funds injected by the Lacor Hospital Complex into the local economy was calculated using the formula proposed by Coppedge in 1970 which is still widely used: $1 / 1 - (x) (y) (z)$.

In this study:

- x is the percentage of income coming from outside Gulu District that Lacor Hospital Complex spent
- y is the percentage of the Lacor Hospital Complex expenditures carried out within Gulu District (including salaries, payment to suppliers, unpaid patients debts, expenditures of the convent and monastery attached to the hospital)
- z is the percentage of income spent by small scale businesses of the Lacor Trading Centre within Gulu District

The team chose to calculate z on the basis of the spending patterns of the various businesses operating in the Lacor trading centre because it is here that the bulk of the money flowing from and through Lacor Hospital to the local economy ends up.

The interviews carried out revealed that 71% of the small businesses owners buy their supplies exclusively in Gulu. The remaining 29% buy their supplies both in Gulu and outside it, mainly in the nearby districts of Amuru, Nwoya and Oyam.

- The team estimated that the 71% of business owners who make purchases exclusively within Gulu spend around 95% of their funds for re-stocking their business and for their personal and family needs. The remaining 29% of traders spend about 80% of their income in Gulu
- From the answers obtained, calculated was the estimated income of these 71% of business owners and this amounted to about 58% of the total income of all the traders included in the sample of 80 small scale businesses.
- It is assumed that this sample is representative of the whole of the trading centre, and so it can be taken that 95% of 58% the total income of the trading centre is spent in Gulu District; $(.95 * .58 = .55)$ implying that 55% of the trading centre income is actually spent within Gulu District.
- About 80% of the remaining 42% of the trading centre income is spent within Gulu District $(.8 * .42 = .33)$

From the records, we have:	$x = \text{USh } 8,526,341,170 / 8,931,594,000 * 100$	$= .95$
	$y = \text{USh } 3,807,759,652 / 8,526,341,170 * 100$	$= .45$
As explained above, we assume	$z = .33 + .55$	$= .88$

Calculation of the multiplier : $1 / 1 - (.95) (.43) (.88) = 1 / 1 - 0.38 = 1 / 0.62 = 1.6$

According to this result, every “new” shilling injected by the Lacor Hospital Complex into the local economy, produces, through successive exchanges and transactions, 1.6 shillings.

Applying this multiplier to the new money spent by the Lacor Complex in Gulu District, we find that USH 3,807,759,652 produced USH, 6,092,415,443 that is, an additional USH 2,284,655,791 (983,494).

07.10 Community perceptions and opinions

Ten Focus Group Discussions (FGD) were conducted: three with members of the communities surrounding the three Health Centres of Amuru, Pabbo and Opit, three with the communities surrounding Lacor Hospital (Layibi, Obia East, Obia West) and four with different groups of Lacor Hospital personnel: Nurses in charge of wards, Nurses, Nursing Aides/Assistants and non-qualified personnel.

The views and perceptions expressed by the Communities around Lacor Hospital were quite different from those expressed seven years ago.

In 2003 the question “*What would happen if Lacor Hospital closed down?*” raised answers like “*If the hospital were not there, how could we survive?*” or “*If the Hospital were not there, it would be as a well drying up*”.

The same question, seven years after, raised answers like “*If the hospital is not there, we will go somewhere else*” or “*We were here before the hospital, we will manage*”. To substantiate these quotes, in another FGD, a participant revealed that when government HCs receive drugs, the local community first go there, they come to Lacor Hospital after drugs have run out in the government HCs or if they have been referred to the hospital as the next level of health care.

In addition, numerous complaints were raised about the harsh manners of the staff. The bitterest criticism about the hospital was heard in Obia East. This community seemed only to see negative aspects to be pointed at. One tentative explanation given to the team for the bitterness of Obia East goes back in time, when the hospital acquired land from that community. Some of the land was bought at a price now considered too low and some of the land was donated. The team did not investigate further to verify this explanation.

Although the other communities pointed to negative aspects of the hospital and raised criticisms, they also mentioned positive actions taken by the hospital and underlined the good coming to their communities because of the presence of the hospital: “*When the nurses get salary, they come and buy our goods and this is a boost to our businesses*” and “*I could not be the way I am if it was not for Lacor, I used to do casual work at the hospital and earn some money and that is how I paid my school fees*” and “*We don’t have to take our children to Nursing schools in Kampala, because we have one in our area, so it is cheaper now for your child to become a nurse*”

During the discussions with other communities, apart from criticism and bitter feelings, the hospital was praised not only for its role as a health care unit but, also, as a source of employment, a place of learning and an engine for the local economy.

In any case, the prevailing atmosphere was negative. We were also told that similar criticism is often voiced during talk shows in the local radios.

The team can make a few hypotheses on the reasons for this changed perception. In 2003 the insurgency was still active, more than 90% of the Gulu District population was displaced, many rural health units and schools were closed. Every evening, women, children and young men were moving into the hospital compound to spend the night in what was deemed to be (and actually was) a safe place. Lacor Hospital was seen as a beacon of hope, a reliable institution and a reassuring presence.

Peace and security brought about flourishing businesses, more possibilities, more choices. Freedom of movement is greater than it has ever been, in this area, for the last 30 years. The Hospital is still necessary and still widely utilized, but its perception is changed.

The complaints about quality of services rotated, mainly, around long waiting time and harsh treatment of patients by hospital personnel.

According to the hospital staff, waiting time is long because patients are many, the investigations to be carried out are many and the computerization of procedures has slowed down the process. Unsurprisingly, the majority of the hospital personnel deny treating patients harshly, although they admit that, in rare occasions, this can happen because of the heavy workload and the stress caused by it. Given that many of the staff members interviewed complained about their heavy workload and the low salary and expressed an evident amount of bitterness, it is certainly possible that some of this bitterness is transmitted to patients through inadequate manners.

In all the groups, the team heard frequent expressions of nostalgia for the good old times, when the hospital was smaller, the nurses fewer and nicer, doctors even fewer and much more committed: "*Lacor isn't anymore what it used to be*". Significantly, a few older nurses, during one to one interviews expressed these same feelings. According to them, in the good old days nurses and doctors were selected not only on the basis of their qualifications and knowledge but, also, on the basis of their character and attitudes. They were talking about the time the hospital had less than five doctors and about 20 nurses.

There is no need to underline the obvious differences, managerial, organizational, even cultural, between a very small rural hospital, in different and less complex times, and a giant hospital with almost 500 beds and more than 600 employees working in rapidly changing, different and difficult times.

Complaints about long waiting time in hospitals and poor mannered health workers, however, are commonly heard all over the world. This is not to minimize the complaints raised by the community members.

The impression of the study team is that the role of Lacor Hospital, nowadays, is seen, more "narrowly", as one health unit, with its strengths and weaknesses and not anymore as an anchor of safety and salvation, a beacon of stability, a rayon of hope, a sort of "sanctuary" as it was in 2003 and before.

Community members, in 2003, complained about the Lacor Hospital fees being too high. Some also said that the Hospital was a profit making organization, confusing income with profit. User fees had been abolished in government health units in March 2001. This year, there was a general consensus that the Lacor Hospital fees are fair, since they are lower than those in many private clinics and a private hospital. In 2003 there were very few private clinics in Gulu and, for the majority of the population, it was hardly

possible to compare Lacor fees with anything else. Today, because of better security and growing economic activity, private clinics are many more and comparisons are possible and easy.

07.11 The economic importance of Opit, Amuru and Pabbo health centres for their communities

With a similar methodology as the one described for the study of Lacor Hospital, the team studied the importance of the three Health Centres of the Lacor Hospital Complex for the economy of their surrounding communities. In conclusion, it can be stated that the three health units play a marginal role in their local economies. This is because of the limited size of their workforce and the relatively limited size of their in-patients. Below are details concerning the single health unit.

07.11.1 Opit Health Centre (Gulu District)

Opit Health Centre III started operating in 1974. It has 18 staff members and 24 in-patients beds. In the FY 2010/2011 the hospital attended to 18,428 out-patients and admitted 2,190 patients.

Seven staff members, 12 in-patients care-takers, 30 small businesses owners / managers and 40 of their customers were interviewed.

There are at least two trading centres in Opit. The nearest to the HC is the smaller; the bigger one is about 1.5 Kilometers away.

The small businesses in the trading centre nearest to the HC display the same variety of goods found around Lacor Hospital and around the other HCs. They go from retail shops to restaurants, from bars to bicycle repairing mechanics, from drug shops to hair dressing saloons. There is also a printing centre that functions when the solar panel accumulates enough energy.

The estimated monthly income of these businesses ranged from US\$ 60,000 (US \$ 26) to US\$ 9,000,000 (US \$ 3,874) the average being US\$ 1,497,000 (US \$ 644) and median being US\$ 600,000 (US \$ 258).

Lumping together the estimated monthly and yearly income of the various businesses and calculating averages and medians, does not make much sense, given their significant variety and the wide range of their estimated income. Nine of the sampled businesses had an estimated monthly income of more than US\$ 1,500,000. Two of them had a monthly estimated income of US\$ 9,000,000 (US \$ 3,874), almost twice as much as the entire estimated financial contribution of the HC to the local economy (see below).

Of the 40 customers of the small businesses active in the trading centre nearest to the HC that were interviewed, 16 (40%) said they were either going or coming from the HC. However, since they all lived in Opit, and they said they frequently bought products in that trading centre and since the trading centre is not particularly near to the HC, it would be arbitrary to associate their local purchases to the HC.

The amount of money spent daily by in-patients care-takers ranged from US\$ 1,000 to US\$ 5,000. The average was US\$ 2,917 and the median was US\$ 2,500. Reportedly, the average length of stay in the Health Centre was three days. Given that, in the FY 2010/2011 there were 2,190 admissions, the amount of money spent in the local trading centres by in-patients and their care-takers in that FY can be estimated at US\$ 16,425,000, equal to US \$ 7,070.

The median of the estimated amount spent, in one year, by staff members to buy food in the nearby trading centres was US\$ 2,378,160, totaling US\$ 42,806,880, equivalent to US \$ 18,427. This represents about 68% of the net pay received by the health workers in the FY 2010/2011.

There being no other significant amount of money spent in the area by Opit HC III personnel and patients, it can be estimated that the total contribution of the HC to the local economy, in the FY 2010/2011, has been US\$ 59,231,880, equivalent to US \$25,498.

In conclusion from the above data and estimates, Opit Health Centre III plays a minor and marginal role in the economy of the area.

07.11.2 Amuru District

Amuru district was created in 2006. Previously, its territory was part of Gulu District. Its total population is officially estimated at about 174,000 (Uganda Bureau of Statistics, 2011) but the District Authorities think it could be much higher since many people, who were living in displaced-people camps, never went back to their original homes.

In the District there is one Health Centre IV, five Health Centres III and five Health Centres II. In addition, one Health Centre IV and eight Health Centres II are completed but not yet operational. The civil servants are 955. The biggest employer in the District is the education sector, with 621 workers, followed by the health sector with 298.

The total district budget for the financial year 2010/2011 amounted to Uganda Shillings 19 billion; of these, 9.2 million (0.05 %) were raised locally through taxes.

07.11.3 Amuru Health Centre

Amuru Health Center III is part of the Lacor Hospital Complex and started operating in 1976. It has a total of 16 staff members, 24 in-patients beds and provides promotive, preventive and curative services. In the FY 2010/2011 it had 25,635 out-patients and 3,330 in-patients.

There are three important trading centres in Amuru; the biggest of the three is located near the health centre, the other two are far from it. We counted 80 small businesses in the nearby trading centre, about 1 km from the gate of the HC.

Six randomly selected staff members, 21 in-patients care-takers, 30 small business owners / managers in the trading centre near the HC III and 37 of their customers were interviewed.

The estimated amount of money spent by the staff members to buy food and other small items in the nearby trading centres, in the FY 2010/ 2011, was US\$ 34,358,400, equivalent to US \$ 14,791 (about 68% of the total net pay received by the health workers).

As for the in-patients care-takers, the amount of money that they reported to be spending daily ranged from US\$ 2,000 to US\$ 7,000; the median was US\$ 6,000 and the average US\$ 5,190. In the FY 2010/2011 the total number of in-patients was 3,330 and the reported average length of stay three days. This allows to estimate a total amount spent to buy food and other essential items for the in-patients and their care-takers, in the nearby trading centres, of US\$ 59,940,000 (US \$ 25,803).

Of the 60 customers interviewed in the trading centre nearest to the HC, 21 (35%) were either coming from or going to the HC, of these, four (19%) came from outside Amuru District, the others lived in the area.

The estimated total amount of money that flowed into the local community through the health centre in the FY 2010/2011 was US\$ 94,298,400, equal to US \$ 40,594.

The small businesses operating in the trading centre nearest to the HC are of a very different nature and their estimated annual income varies a lot, ranging from USh 3,600,000 (US \$ 1,550) to USh 540,000,000 (US \$ 232,458).

According to the ACAO and other civil servants interviewed, the economy of the district and of its main town is expanding rapidly and the population has increased not only because of the natural growth rate but because many previously displaced persons did not go back to their original areas even after the end of the insurgency.

For these reasons and for the relatively small volume of the financial flows coming through it, the study team concluded that the importance of the health centre for the local economy is only marginal.

07.11.4 Pabbo Health Centre

Pabbo Health Centre III, also in Amuru District, started to operate in 1979. Like Amuru HC III, it has 16 staff members and 24 in-patients beds. In the FY 2010/2011 the HC received 22,820 out-patients and admitted 3,104 in-patients. In Pabbo there is another HC III, run by the government.

There are at least four trading centres in Pabbo. The nearest to the Health Centre is not the biggest one and it is about one Kilometer away.

Eight randomly selected staff members, 26 in-patients care-takers, 30 small business owners / managers and 37 of their customers were interviewed.

The estimated daily average amount of money spent by care-takers to buy food for themselves and their patients ranged from USh 1,000 to USh 27,000, the average was USh 6,500 and the median USh 4,750. During the FY 2010/2011 the total admitted patients were 3,104 and the reported average length of stay was three days. Using the median, this give an estimated total amount of money spent to buy food and other essential items in the nearby trading centres, in the FY 2010/2011, of USh 44,232,000 (US \$ 19,041).

The estimated amount spent by staff members to buy food in the nearby trading centres ranged from USh 50,000 to USh 300,000, the average being USh 145,033 and the median USh 198,390. This gives an annual estimated total amount of money spent by the HC personnel to buy food of USh 38,090,880(US \$ 16,397). This represent about 71% of the total net pay received by the health workers.

The financial contribution of the HC to the local economy in the FY 2010/2011 can be estimated at USh 82,322,880 (US \$ 35,438).

Of the 37 small businesses customers interviewed, only two were going to or coming from the Health Centre.

As in the case of Pabbo, calculating averages and medians for the estimated annual income of the small businesses seems meaningless. One of them (a grinding mill) has an estimated annual income of USh 324,000,000 (US \$ 139,475) which is more than three times the total estimated financial contribution of the HC to the local community.

Even in this case, therefore, the team did conclude that the economic importance of the HC for the local community is marginal.

08. Discussion

08.1 How the Lacor Trading Centre has changed since 2003

In 2003, one market and 150 small businesses were counted around the hospital. Today there are two markets and more than 215 small businesses. The table in Annex I shows the number and the type of the small businesses observed and counted.

The 2003 study reports that old people said that neither the markets nor the shops were there when the hospital was not there. The population in the three parishes of Bardege, For God and Patuda, occupying the area immediately around the hospital, is currently estimated at 22,000. According to the Layibi Local Council I Chairperson the total population is bigger and grew beyond its natural growth rate because many formerly internally displaced persons did not go back to their areas of origin after the end of the insurgency.

The markets and the other commercial enterprises around the hospital today benefit from the presence of this relatively high number of people residing in the area and from the presence of five primary schools, one secondary school, one vocational school, one teacher's training college, a kindergarten and a convent. The road passing in front of the hospital leads to South Sudan and dozens of lorries pass by every day either going or coming back from the youngest African Country that replaced the European Union as Uganda's major trading partner. Many stop in the Lacor trading centre for the night or for some rest. This new development is a significant stimulus for the local economy.

As reported by the small scale businesses/managers and other respondents, many people come to buy at this trading centre and at these markets even if they don't need to go to the hospital. The trading centre has, now, a life of its own.

This is also suggested by the fact that, while virtually all the out and in-patients buy their supply in the Lacor trading centre as well as about 85% of the Lacor Hospital personnel, only about 43 % of the trading centre customers interviewed were in the trading centre because of the hospital, the remaining 57% would have been there anyway.

In addition to the market stalls and the businesses using permanent structures, there are numerous food stalls, used clothes vendors, mats vendors, charcoal vendors and many other hawkers regularly working around the hospital. The volume of their business was not captured in this study. It is probably small in absolute terms but is likely to be an important source of income for the individuals involved and their families.

08.2 Summary of the economic role of Lacor Hospital Complex in the local economy

In the FY 2010/2011, as in the FY 2000/2001, Lacor Hospital, with its 614 employees, is the largest employer in Gulu District after the education sector and the biggest in the private sector. It employs more workers than the whole Government District Health system (employing 414) and more than the Gulu Regional Referral Hospital (employing 345). Lacor Hospital is the second contributor to NSSF in the district, after Gulu University. As in the FY 2001/2002, even in FY 2010/2011 the bulk of the Lacor Hospital Complex income comes from outside Uganda: 76%. Considering the contribution of the Uganda Government, we have 84% of the total income coming from outside Gulu District.

Of the total amount of money spent by the Lacor Hospital Complex to pay its employees, pay taxes, buy the necessary supplies, about 45% is spent within Gulu District, 1% within Amuru district, 51% is spent in Kampala (mainly to buy supplies not available in Gulu) and 3% is spent abroad.

About 4,985,425,128 billion, more than US \$ 2 million, flowed from or through the hospital into the local community.

The **direct flows** of money from the hospital to the local economy are the sum of salaries and wages, taxes retained in Gulu District, supplies bought in Gulu by the hospital and the two convents attached to it. The team included in this flow more than US\$ 60 million of unrecovered fees, either because they were waived for poor patients or because the patients left the hospital without paying. Since services were delivered but the corresponding financial flow into the hospital did not materialize, the money remained in the community and can be considered a financial contribution from the hospital.

The **indirect flows** of money into the local economy through the hospital, because of its presence, are represented by the money used to buy food and other supplies by the out-patients, by the care-takers of the in-patients and by the students of the schools attached to the hospital.

About 51% of what flows from and through the hospital into the local economy comes from out- and in-patients and, in small part from the hospital students while the remaining 49% comes from the hospital funds in form of salaries, taxes, supplies purchases, etc.

As shown in Table 4, below, the total amount of money flowing into the local economy from and through the hospital amounts to US\$ 4,985,425,128 (US \$ 2,146,115).

N°	Financial flows from the hospital	Amount in Ush
1	Amount from salaries used to buy food	1,012,492,800
2	Amount from salaries used to pay school fees	438,675,250
3	Taxes remaining in Gulu (LST)	15,250,000
4	Hospital supplies bought in Gulu	812,961,558
5	Unrecovered patients debts	60,345,520
6	Nuns Convent local expenditures	36,000,000
7	Fathers and brothers convent local expenditures	60,000,000
	Total amount coming from the Hospital	2,435,725,128
	Amount expressed in US\$	1,048,526
	Financial flows through the hospital	
8	Students purchases	25,000,000
9	In-Patients local expenditures	857,870,000
10	Out-patients local expenditures (transport, food, drinks)	1,666,830,000
	Total amount coming through the Hospital	2,549,700,000
	Amount expressed in US \$	1,097,589
	Total amount coming from and through the hospital	4,985,425,128
	Amount expressed in US\$	2,146,115

Table 4: Estimated total amount of money flowing to the local economy from and through Lacor Hospital

When we add to this the new money produced by the ripple effect, US\$ 2,284,655,791, we have a total contribution of Lacor to the local economy of US\$ 7,270,080,919 (US \$ 3,129,609).

09. Conclusions

The importance of Lacor Hospital Complex and, especially, the Hospital within the national health system is obvious for the quantity and quality of services delivered. The importance of the Hospital within the Gulu District health system is equally obvious and even more significant.

The results of this study are not entirely comparable with those of the study carried out in 2003. The study team adopted slightly different methods and examined parameters not examined then, like the financial contributions of in and out-patients. In addition, the team excluded from the study the employees of the Gulu District suppliers of Lacor because of the small volume of the transactions between Lacor and these suppliers. Some comparisons are, however, still possible.

Compared with the findings of the 2003 study, community perceptions of the hospital have changed. The sense of gratitude towards this institution is now much more mitigated and criticism, sometimes very bitter, is heard much more frequently.

The district economy is growing rapidly and there are more actors than in 2003: new health units (mainly, but not only, private for profit), new commercial enterprises, new trading possibilities.

Notwithstanding the changes, the importance of the Lacor Hospital Complex and, especially, of Lacor Hospital for the economy of the surrounding community and of Gulu District is still very significant. This is recognized not only by the owners and managers of the commercial enterprises surrounding the hospital but, also, by the community at large, despite their criticism.

This is convincingly confirmed by the financial figures reported and analyzed in the previous pages.

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Annex 1: Type of business identified in the trading centres near Lacor Hospital and the three Health Centres of Amuru, Opit and Pabbo

N°	Type of business	Lacor Hospital trading centre	Amuru Health Centre III Trading centre	Pabbo Health Centre III Trading Centre	Opit Health Centre III Trading Centre
		<i>Radius taken: 50-500m from the hospital gate</i>	<i>Radius taken: 50-500m from the HC gate</i>	<i>Radius taken: 1-1½ km from the HC gate</i>	<i>Radius taken: 1-1½ km from the HC gate</i>
01	Retail shops: selling household supplies, fabrics, tailoring outlets, bakery and used clothes	93	46	48	25
02	Drug shops	17	09	09	06 + 01 Veterinary shop
03	Butcheries/meat stalls	08	02	02	0
04	Electrical & service shops: including sale of electronics, music shops, repair of radios	18	01	03	01
05	Hair dressing	10	01	01	01
06	Restaurants and bars: selling food and drinks	33	10	12	13
07	Market with several stores selling fruits, vegetables, potatoes, fresh fish, second hand clothes	02	01	01	01
08	Grinding mill: maize/millet flour	07	02	0	02
09	Rice husking	0	0	01	0
10	Grain/cotton buying and selling	12	11	12	05
11	Carpentry/metal woodworks	05	01	0	01
12	Fuel pump/fuel selling points	01	01	02	01
13	Photo studios	04	0	0	0
14	Depot for beer and soft drinks	03	03	02	01
15	Bicycle/motor-cycle repair points	03	03	03	07
16	Boda-boda (motor cycle taxi) stage	02	01	02	02
17	Taxi stage	01	0	0	0
18	Banks: Post bank and Centenary	02	0	0	0
19	Local cooperative saving scheme	0	01	0	01
20	Gym	01		0	0
21	Disco hall	0	0	02	0
22	Lodge: bedding and accommodation facilities	02	0	01	02
	Total	215	93	101	70
	Sampled	80	30	30	30
	% of sample representation	40%	32%	28%	43%

Annex 2: Key informants interviewed

Name	Institution / Function
Mr Abwoye Stephen	District Biostatistician, Amuru District
Mr Anywar Tarsis	Secretary for Health Obya East Local Council I
Ms Anyiro Betty Justin	Principal Tutor, Lacor Nursing School
Mr Bujara Augustin	Acting Town Clerk, Gulu Municipality
Dr Corrado Bruno	Advisor, Projects
Mr Emojong Joel	Supervisor Domestic taxes Uganda Revenue Authority Gulu
Mr Kiganda Abdallah Mushobya	Chief Administrative Officer, Gulu District
Ms Laker Milly	Assistant Chief Administrative Officer, Amuru District
Dr Licea Eric	Medical Superintendent, Gulu Independent Hospital
Mr Molteni Thomas	Corti Foundation local Representative and Senior Internal Auditor
Mr Mubini Mohamed	Principal Hospital Administrator, Gulu Regional referral Hospital
Mr Nyero Robert	Clinical Officer, Health Department, Gulu Municipality
Mr Ocaya Pier Paul	Hospital Secretary, Lacor Hospital
Mr Odeke Michael	Branch Manager, NSSF Offices, Gulu Branch
Mr Ojambo Steven Paul	Manager, Northern Region, Customs Department, Uganda Revenue Authority
Mr Ojok Godfrey	Clinical Officer in Charge, Amuru Health Centre III
Mr Okello Nixon	Chairman, Obya West Local Council I
Mr Okech Ignatius	Local Councillor Amuru Local Council III
Dr Ogwang Martin	Institutional Director, Lacor Hospital
Mr Ojara	LCIII Chairman Pabbo Local Council III
Mr Ojera Patrick	Secretary for Health Pabbo Local Council III
Dr Onek Paul	District Health Officer, Gulu District
Mr Onen George	District Records Officer, Amuru District
Dr Opira Cyprian	
Mr Otti Benedict	Clinical Officer In Charge, Pabbo Health Centre III
Mr Oyola Benson	Chairman, Local Council I, Layibi
Mr Oyon Lagai Christopher	District Personnel Officer, Amuru District
Br Tremmel Konrad	Director, Comboni Vocational Training Institute, Layibi

Annex 3: Methodology details

1. Study design:

The study design used was descriptive cross sectional.

2. Study area:

The geographical study area was Gulu and Amuru districts. Specifically the study was carried out at Lacor Hospital and HCIIIs; Amuru and Pabo in Amuru district and Opit in Gulu District.

3. Study population:

The study population included:

- Lacor Hospital and the three schools,
- Health Centres III: Amuru, Pabo and Opit ,
- Surrounding communities of the four health facilities,
- Employees of Lacor Hospital, Amuru HCIII, Pabo HCIII and Opit HCIII,
- Students at the Anaesthesiology, Laboratory and Nursing Schools of Lacor Hospital,
- Suppliers to the Hospital,
- Gulu and Amuru District Administrators/Managers,
- Managers of other Hospitals in the district,
- Small-scale businesses in the surrounding area of the four health facilities,
- Customers of small scale businesses in the surrounding areas of the health facilities.
- Care takers of in-patients admitted at the four health facilities
- Out-patients of Lacor Hospital

4. Sampling procedures:

Probability sampling was applied to the employees of the four health facilities, the students of the two schools, small scale businesses, customers of small scale businesses, out-patients and care takers of inpatients.

Non-probability sampling was applied to the suppliers to the Hospital, the District Administrators/Managers, Managers of other Hospitals in the district, boda-boda/taxi drivers and participants of the focus group discussions.

4a) Sample size

i) Employees of Lacor Hospital

Assumption: The study conducted in 2003 determined that 85% of employees' cost was retained in the local area of Lacor Hospital. These costs included salaries, wages and allowances.

Calculation of sample size: formula $P(1-P)/e^2$

Where: P = proportion of employees cost retained in the local area of Lacor Hospital.

e = margin of error at 95% confidence level.

Sample size = $85 \times 15 / 2.5^2 = 204$ employees

Total number of employees on the pay roll as at 30th September 2011 was 614 employees excluding seventy five (75) casual construction workers because they are not permanently on the payroll of the Hospital. They are employed as and when construction works are on-going.

To determine the distribution of the sample size of 204 employees between Lacor Hospital and HCs, Amuru, Pabbo and Opit; stratified random sampling according to health facilities and cadre of staff was applied.

A proportionate representation to the sample from Lacor Hospital and the three health centres was determined. To begin with, the proportion (a percentage) of staff represented by each of the health facilities to the total number of staff (614) was calculated. The percentage was then applied to the sample size of 204 to determine what proportion the health facility could contribute to the sample size as indicated in table 5:

Health facility	Proportion	Percentage (%)	Sample size
Lacor Hospital	564/614	91	186
Amuru HCIII	16/614	3	6
Pabbo HCIII	16/614	3	6
Opit HCIII	18/614	3	6
Total		100	204

Table 5: Sample size by health facility

The sample size was further disaggregated: a proportionate representation of employees by cadre to the sample size of 204 from each of the health facilities was determined as reflected in table 06.

Cadre	Proportion				Percentage (%)				Sample size			
	LH ⁸	A ⁹	P ¹⁰	O ¹¹	LH	A	P	O	LH	A	P	O
Allied health professionals	43/564	2/16	2/16	2/18	8	6	6	11	15	1	1	1
Doctors	46/564	-	-	-	8	-	-	-	15	-	-	-
Support staff (Admin & Mgt)	41/564	1/16	1/16	1/18	7	6	6	5	14	1	1	1
Support staff (Clinical)	219/564	9/16	8/16	9/18	39	56	50	50	72	2	2	2
Support staff (Technical)	51/564	-	-	-	9	-	-	-	17	-	-	-
Trained Nurses/Midwives	154/564	4/16	6/16	6/18	27	25	37	33	50	2	2	2
Tutors	10/564	-	-	-	2	-	-	-	3	-	-	-
									186	6	6	6

Table 06: Sample size by cadre and health facility

The sampling frame used was the pay roll as at 30th September 2011.

Simple random sampling using the Excel software was applied. The software randomly assigned numbers to each cadre of employees. Depending on the required sample for a particular cadre, an instruction was

⁸ LH: Lacor Hospital

⁹ Amuru HCIII

¹⁰ Pabbo HCIII

¹¹ Opit HCIII

entered for the software to randomly select the required sample, and it automatically generated names for the sample size required.

ii) Students of the three trainings schools based at Lacor Hospital.

The Hospital has three trainings schools: the School of Laboratory Technicians, the Nursing School and the School of Anesthesiology Technicians. In the FY 2010/2011 the total number of students was 250, at the time of this study they were 333.

Assumption: 90% of the students have pocket money and spend it within Gulu District.

Calculation of sample size: formula $P(1-P)/e^2$

Where: P = proportion of students who have pocket money and spend it within Gulu District
e = margin of error at 95% confidence level.

Sample size = $90 \times 10 / 2.5^2 = 144$ students

The proportion (percentage) that each school is supposed to contribute to the sample of 144 was calculated and is reflected in table 7.

School	Proportion	Percentage (%)	Sample size
Laboratory Technicians	64/333	19	28
Registered and enrolled nurses	260/333	78	112
Anesthetist Technicians	9/333	3	4
Total		100	144

Table 7: Sample size by School

For the difficulty of getting the students of the nursing school because they were either busy; in class, in the hospital, or in the library, only 122 respondents out of the expected 144 were interviewed: 29 from the laboratory school, 87 from the nursing school and 6 from the anesthesiology school. Given the homogeneity of the students for the studied parameters (pocket money and its use). The team thinks the 15% non-response rate, although high, did not affect the representativity of the sample.

The sampling frame used was the school enrollment lists for the two schools. Simple random sampling using the Excel software was applied. The software randomly assigned numbers to each cadre of students. Depending on the required sample for a particular school, an instruction was entered for the software to randomly select the required sample, and it automatically generated names for the sample size required.

iii) Small-scale businesses.

Lacor Hospital Trading Centre.

In the previous study conducted in 2003, small-scale businesses counted and in existence within a radius of 50 - 400 meters from the Hospital main gate were 150.

In the current study taking into account that Lacor center has expanded since 2003; the radius was increased to a range of 50 – 500 meters from the Hospital main gate and number of small scale businesses counted were 215.

To determine the sample size of small scale businesses, the following assumption was made: 95% of small-scale businesses within 50 - 500 meters from the Hospital main gate serve Lacor Hospital personnel, out and in patients of the hospital as customers.

Calculation of the sample size: Formula: $P(1-P)/e^2$

Where $P =$ proportion of small scale businesses attributable to the existence of Lacor Hospital as per the above mentioned assumption.
 $e =$ margin of error at 95% confidence interval.

Sample size = $95 \times 5 / 2.5^2 = 76$ small-scale businesses.

The sample size was rounded off to 80 small scale businesses taking into account the possibility of non-response.

Systematic random sampling was applied to choose the 80 businesses. An interval of 3 was determined using the formula:

Total number/sample size:

$215/80 = 2.6$ approximately 3.

A starting point was randomly picked by throwing a pen and the direction the pen faced was chosen as the starting point.

Amuru, Pabbo and Opit HCIII Trading centres

At each of the three trading centres, 30 small scale businesses were randomly sampled. The sample size of 30 was conveniently determined and assumed to be representative of the businesses counted in the trading centres. A total of 90 small scale businesses were thus randomly sampled and interviewed from the three centres.

iv) Customers to small scale businesses

The sample size for small scale businesses sampled from Lacor trading center were 80. Two customers of the 80 small scale businesses were randomly sampled. A total of 160 customers were thus sampled and interviewed at exit over a period of 01 week.

A total of 90 small scale businesses were sampled from the three HCIIIs. Again two customers from each of the businesses were sampled randomly and interviewed at exit; a total of 180 customers interviewed over a period of three days; a day per HC.

v) Care takers of inpatients

Lacor Hospital

In the FY 2010/2011 26,396 patients were admitted at Lacor Hospital.

Assumption: Each of the patients admitted has at least one attendant. Of these attendants, 95% of buy items from Lacor trading center.

Calculation of the sample size: Formula: $P(1-P) / e^2$

Where $P =$ proportion of inpatient attendants who buy items from Lacor trading center

$e =$ margin of error at 95% confidence interval.

Sample size = $95 \times 5 / 2.5^2 = 76$ care takers of inpatients.

vi) Out-patients of Lacor Hospital:

In the FY 2010/2011 Lacor Hospital received 166,163 out-patients. The team assumed that at least 90% of them spent money in the Lacor Trading Centre. Calculated was the sample size with the following formula:

$P(1-P) / e^2$

Where $P =$ proportion of out-patients who buy items from Lacor Trading Center

$e =$ margin of error at 95% confidence interval.

Sample size = $90 \times 10 / 2.5^2 = 144$ outpatients.

At Amuru, Pabbo and Opit HCIIIs

At the three trading centres, a sample size of 25 was conveniently determined and assumed to be representative.

vii) Suppliers to the Hospital

Lacor Hospital has a total of 60 registered suppliers. In the financial year 2010/11, of these suppliers, 35 actually made supplies to the Hospital and they were paid 442,061,160/= by the Hospital. However, of this amount paid, 220,996,205/= was in micro procurements of less than 500,000/= for purchases of food items for the guest house and intern's mess.

Companies that made supplies to the Hospital worth over 8 million shillings were seven (7) and they were paid 170,080,845/= by the Hospital.

For the study, all the seven companies were sampled and the head of the company was interviewed as a key informant. These companies included: Umeme Limited, Gulu Pharmacy, Z.B. Jiwani, Galaxy Stationeries and General Merchandise, Daniel Comboni Vocational Institute, Kong Yat Transporters Ltd and Lacan Mwo Ki Cinge.

vii) Key informants

Key informants were purposely selected because of their roles and responsibilities as well as the information they could provide to the study. The list of the key informants interviewed is in Annex 2.

viii) Focus group discussions

Surrounding community

A total of six FGDs were held with the local community surrounding the health facilities. The participants were conveniently selected to represent a homogenous cross section of the local community.

Three focus group discussions (FGD) consisting of 14-19 participants were held within Lacor Hospital local community of Bar-dege and Layibi divisions: at Obia West, Obia East and Layibi.

At Amuru HCIII, Pabbo HCIII and Opit HCIII, a FGD constituting of 13-30 participants was held at each site with the local community.

Staff of Lacor Hospital

A total of four FGDs were held with the staff of Lacor Hospital constituting of 11-17 participants. The FGDs were held with (i) Senior staff, In-charge of units, (ii) Nurses/midwives, (iii) Nursing assistants/aides, (iv) and cleaners and (v).

Data collection techniques and tools

Interviews were carried out with the use of questionnaires and interview guides. Records were reviewed. An interview guide was used for the focus group discussions. (Data collection tools are attached in Annex 4). Personal observations and informal interviews were also used.

Data analysis:

Data were analyzed manually and with the help of the Microsoft excel program.

Ethical considerations

All data was collected with full knowledge of the Hospital management and the community concerned, and the data so collected was strictly used for the purpose of the study. All information was treated with confidentiality. All the persons interviewed were informed about the scope and objective of the study, their participation was spontaneous and they were informed that they could terminate the interview at any moment.

Annex 4: Questionnaires used in the study

Note: Questionnaires N° 1, 4, 5 and 6 have been used also in the three health centers of Amuru, Opit and Pabbo

Questionnaire 1:**Employees of Lacor Hospital**

Name of the interviewer: _____ Questionnaire Number: ____ Date: _____

A) Personal Data of the interviewee

Cadre : _____

1. Age: ___/ 2. Sex: a. M ___/ b. F ___/ 3. N° of children: ___/ 4. N° of dependents: ___/

5. Residence: _____

B) Salary / Wage and Expenditure pattern

6. How often are you paid a salary or wage? a. Monthly ___/ b. Others (please specify) _____

7. How much are you paid (net pay)? _____/

8. How much do you pay, each year, for school fees?

a. Within Gulu District _____

b. Outside Gulu District _____

9. On average, how much of your earnings is spent, monthly, for:

a. Food _____ (% of pay _____) / b. Rent _____ (% of pay _____) c. Others please specify as % of pay): _____

10. Do you make your household purchases mainly: a. Within Lacor. ___/ Gulu town ___/ b. Outside Gulu ___/

11. Do you have any other source of income? Yes ___/ No ___/

12. If yes, please describe it: _____ 13. Where is this business located? _____

14. How many people work in it? _____

15. Did you set it up with: a. Hospital Loan ___/ b. Bank Loan ___/ d. Other, please specify:

16. The Hospital runs a loan scheme. Did you ever get a loan from the hospital? Yes ___/ No ___/

17. If yes: how many times? _____/ 18. How much did you get in total? _____

19. What did you use it for? Paying School Fees: a. ___/ Setting up a business: b. ___/ Others, please specify: _____

Apwoyo matek

Questionnaire 2:**Casual workers at Lacor Hospital**

Name of the interviewer: _____ Questionnaire Number: ____ Date: _____

A) Personal Data of the interviewee

Cadre : _____

1. Age: ___/ 2. Sex: a. M ___/ b. F ___/ 3. N° of children: ___/ 4. N° of dependents: ___/

5. Residence: _____

B) Salary / Wage and Expenditure pattern

6. How often are you paid a salary or wage? a. Monthly ___/ b. Others (please specify) _____

7. How much were you paid last time you worked for Lacor Hospital (net pay)? _____/

8. How much do you pay, each year, for school fees?

a. Within Gulu District _____

b. Outside Gulu District _____

9. On average, how much of your earnings is spent, monthly, for:

a. Food _____ (% of pay _____) / b. Rent _____ (% of pay _____) c. Others please specify as % of pay): _____

10. Do you make your household purchases mainly: a. Within Lacor. ___/ Gulu town ___/ b. Outside Gulu ___/

11. Do you have any other source of income? Yes ___/ No ___/

12. If yes, please describe it: _____ 13. Where is this business located? _____

14. How many people work in it? _____

15. Did you set it up with: a. Hospital Loan ___/ b. Bank Loan ___/ d. Other, please specify: _____

16. The Hospital runs a loan scheme. Did you ever get a loan from the hospital? Yes ___/ No ___/

17. If yes: how many times? _____/ 18. How much did you get in total? _____

19. What did you use it for? Paying School Fees: a. ___/ Setting up a business: b. ___/

Others, please specify: _____

Apwoyo matek

Questionnaire 4:
Small scale businesses owners / managers around Lacor Hospital

Name of the interviewer: _____ **Questionnaire Number:** ____ **Date:** _____

Type of business: _____

1. Name of the interviewee: _____ 2. Age: _____
3. Role of the interviewee: a. Owner ___/ b. Employee ___/
4. How many people work in this business including yourself? _____
5. How many days per week is this business open? _____
6. On average, what is the daily income of this business? _____
(Data collector convert in monthly income: _____)
7. The majority of your customers come from: a. Lacor ___/ b. Gulu town ___/ c. Outside Gulu ___/
d. I Don't know ___/
8. Do you purchase your supplies mainly in: a. Lacor ___/ b. Gulu town ___/ c. Outside Gulu ___/ d. I don't know ___/
9. Do you think that Lacor Hospital is important for your business? Yes ___/ No ___/
10. Please, explain your response: _____

Possible additional comments or observations by the Data Collector: _____

Questionnaire 7:

Out-patients, Lacor Hospital

Name of the interviewer: _____ **Questionnaire Number:** ____ **Date:** _____

1. Interviewee: Sex a M ___/ b F___/ 2. Age: _____

3. Where do you come from? a. Lacor area ___/ b. Gulu town ___/ c. Gulu District ___/ d. Outside Gulu District ___/

4. How did you come here? a. Boda boda ___/ b. Taxi ___/ c. I walked ___/ d. Other (please, specify) _____

5. How much did you spend for transport? _____

6. Will you spend the same for going back? _____

7. Did you buy anything in the shops around here? Yes ___/ No ___/

8. If yes, what did you buy?: _____

9. If yes, how much did you spend? _____

8. Do you intend to buy anything in the shops around here before going back home? Yes ___/ No ___/

9. If yes, what do you intend to buy? _____

10. How much do you intend to spend? _____

Possible additional comments or observations by the Data Collector: _____

