

Improving University Research and Education in Honduras

Erik W. Thulstrup

**Department for
Research Cooperation**

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Sida Evaluation 07/15

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Acronyms

CEDOH	Center for Documentation in Honduras
COHCIT	Honduran Council of S&T
CONACTA	National Council of Science and Farming Technology.
CRA	Centro Recursos de Aprendizaje, Learning Resources Center, recently renamed DEGT (see below)
CSUCA	Council of Central American Universities
DEGT	Executive Directorate for Technology Management
FONAC	Foro Nacional de Convergencia
IFS	International Foundation for Science
ILAEDES	Instituto Latinoamericano de Educación para el Desarrollo (Puerto Rico)
INASP	International Network for the Availability of Scientific Publications
PBL	Problem Based Learning
SICEVAES	Central American System for the Evaluation and Accreditation of Higher Education
S&T	Science and Technology
SUED	Sistema de Educacion a Distancia, the UNAH Open University
TC	Transition Commission
UNAH	Universidad Nacional Autonoma de Honduras
UPNFM	Pedagogical National University Francisco Morazán

Summary

Background. The use of knowledge as the vehicle for development has been successful in many of the countries that have tried it – from Singapore and South Korea to, more recently, large countries like China and India. After the devastation caused by hurricane Mitch, the national Congress of Honduras decided to also use this strategy. An “organic law for the University” was passed in 2004. It placed the country’s largest and most important university, UNAH, in the center of the development efforts. A Transition Commission (TC) was appointed to support and direct UNAH in the reform processes. The mandate of the TC ends in May, 2008.

UNAH does not only have more than 80,000 students, 60% of all university students in the country, it also has a series of important obligations with respect to higher education in Honduras. It is therefore important that UNAH performs well in all respects. However, this is hardly the case at present. UNAH is primarily a teaching school, with only few research activities, its management is slow and inefficient, and its outreach towards real life activities in Honduras is limited. Furthermore, the work at UNAH is often interrupted by strikes among staff or students, creating a poor image of UNAH in the media.

In order to correct this situation, the TC has introduced a visionary nine-point priority list for the UNAH reforms, which emphasizes the importance of research activities, especially those that may help solve real life problems in Honduras. In the future, university education will be closer integrated with the growing number of research activities as well as with the work on real life problems. There is a clear difference from the situation in many other poor countries, since the Government of Honduras is willing to contribute considerably to the modernization of UNAH. Substantial Government funds have already been provided for UNAH cooperation with weak communities, as well as for university research grants, with an emphasis on research training and on Science and Technology fields.

The Sida-SAREC cooperation. Sida-SAREC has taken an interest in the reform activities from the start. A 3-year formal cooperation agreement with UNAH started in 2005, with the following purposes:

- Support for reforms of university management, university research, and educational practices
- support for a number of individual research and research training projects primarily within engineering and microbiology, specializing in subjects of key importance for the population in Honduras
- improvement of the UNAH ICT systems and use, and an upgrading of the library
- assistance with the planning and evaluation of the reform process

Now, after two years of work on the agreement, it is clear that the results within the individual research projects are highly satisfactory – some laboratory improvements are being made or have been made and highly talented graduate students work on PhD programs at Swedish universities according to a sandwich model.

The ICT development is progressing largely as planned; considerable improvements in the ICT opportunities on the UNAH campuses will be introduced later in 2007. This is an important part of the reforms and accounts for almost half of the Sida-SAREC financial contribution. Furthermore, the library modernization has started to produce results.

Unfortunately, the reform of the UNAH management, especially the introduction of a simple and transparent financial management system, has progressed much more slowly than expected. One reason may be that the management staff sees mainly disincentives associated with the modernization – since their present power to a large extent is based on non-transparent, complicated and, by most, poorly understood practices.

Conclusions and recommendations. Although the cooperation agreement between Honduras and Sida-SAREC may be considered a complete package, the failure to deliver within a single area (management) should not delay or cancel the productive work in other fields. This is especially true for the highly important ITC upgrading and for the promising research projects. However, Sida-SAREC must continue to assist and put pressure on UNAH in connection with the management reforms. UNAH, on its side, must do its best to improve its productivity and efficiency, for example by creating a team spirit (also among bureaucrats) within the university, a pride over accomplishments in connection with the reform efforts, and a much improved media image of UNAH.

The TC must act faster and more forcefully when problems appear, e.g. as in the case of the financial management. Furthermore, during its last year, the TC should try to emphasize strategic goals and, in particular, mobilize the forces within and outside UNAH that support the reform activities. This will leave the office of the Rector in a stronger position in 2008, when it takes over many of the present obligations of the TC.

It should not be overlooked that, in spite of the availability of increased Government research funding, research support from outside, with specific demands to quality and evaluations, is a very important part of the modernization of UNAH. Furthermore, an upgrading of research in a much larger number of fields than those presently included in the Sida-SAREC cooperation is required, and UNAH should actively seek support from other bilateral or multilateral donors, development banks, and NGOs. The fact that the research strategy emphasizes real life need in Honduras should make this easier.

The availability of relatively substantial Government research funding, and the TC policy of promoting research activities in general, are likely to attract many inexperienced researchers at UNAH. It is important that they are provided with guidance and support, for example through course and workshop activities on research and dissemination strategies, through the availability of language support, etc.

The interaction between education and research must be intensified, both by applying new research results in courses and other educational activities, but also by drastically increasing the involvement of undergraduate students in the research projects. This will create a cadre of research supporters at UNAH and in the society and may also increase research productivity.

1. Background

Supporting poverty reduction through knowledge based development. Honduras has the third lowest per capita income in Latin America and the Caribbean, around USD 1,000 per year (although it is significantly higher in purchasing power), and most social indicators for the country, from educational indicators to the frequency of AIDS, etc. are weak. Almost two thirds of the population live in poverty. The country was hit very hard by the hurricane Mitch in the late 1990s. Partly as a result of this, Honduras formulated a poverty reduction strategy in 2001, of which education, including higher education, is an integral and important part.

A large number of Central American universities are these years undergoing extensive and badly needed reforms. This is done in part to make their research results and graduates more useful for real life activities, including development and poverty reduction activities, but also in order to be able to take part in the very important, ongoing internationalization (even globalization) of higher education and research. In Central America, these efforts are coordinated by the Council of Central American Universities (CSUCA), and the Central American System for the Evaluation and Accreditation of Higher Education (SICEVAES).

Higher education in Honduras. The higher education system in Honduras, including a number of private universities, has expanded significantly with respect to student numbers in recent years, and the country spends about 1.2% of its GDP on higher education. More than 120,000 students are presently studying in higher education institutions, more than 80% of them in public universities. However, this corresponds to only a small fraction (less than 15%) of the college-age population in the country. The situation is not improved by the fact that the dropout and repetition rates are high (typically 35% and 20%, respectively), and study times therefore often very long.

The universities are mainly teaching schools; research is very limited – less than 3% of the university teachers are research active. As a result, research based and -updated education is rare. The opportunities for active research have also for many years been limited, partly because the university infrastructure has been insufficient – libraries without computerized processing, old laboratories, outdated and very limited equipment, few computers, etc. However, the main reason may be the lack of research culture and traditions. In addition, public universities are highly politicized; corruption used to be common, the academic demands (and thus performance) were low, and much work at the universities was often completely separated from the real life needs of Honduras.

The research expenditures in Honduras have been estimated to be around 0.05% of the GDP, compared with 2–3% in advanced industrialized countries, over 1% in Brazil and 0.50% in Mexico¹. A search in the database of IFS, the International Foundation for Science, which supports natural resource research in the poorest countries, shows that during the last decades only four Hondurans have received IFS grants, the last one in 2003. This figure is low, for example compared with those for small and poor African countries (e.g. Mali has received 21 IFS grants and Malawi 29). IFS grants target young scientists with considerable success, the grants are often of great importance for their productivity and careers, and the very low participation of Honduran young scientists in IFS supported research must be considered a wasted opportunity (Cetto et al, 2001).

The Honduran S&T system is based on two organizations, COHCIT, the Honduran Council of S&T, and CONACTA, the National Council of Science and Farming Technology. However, neither of these organizations have the power nor funding to do much. Most research, registered by COHCIT, takes

¹ Compared with, for example, South America, there is a striking shortage of S&T, Higher Education and Research data for Central American countries. For some recent, comparative numbers, see R. Bruno (2005).

place in the public sector. The research projects have so far rarely been part of the “normal” activities at the universities; they are usually not financed by the universities, but by external sources such as government agencies, NGOs, or other international sources. As a result, the essential upgrading of university education through active research is rare in Honduras.

The most important university in Honduras (see below), with a specific obligation to develop higher education and research, is University Nacional Autonoma de Honduras (UNAH). One might say that UNAH has several of the obligations a Ministry for Higher Education would have (but such a ministry does not exist in Honduras). UNAH was founded 160 years ago, in 1847, with Father José Trinidad Reyes as its rector. It became a government institution in 1882, but received autonomy in 1957; at the same time it was given a special task as leader of higher education in Honduras.

In general, the constructive spirit at UNAH, at least until a few years ago, has not been impressive. Although it, for many reasons, was clear that a drastic higher education reform was badly needed, most students and staff members were more or less indifferent, and several groups were directly against reforms. It was only because of pressure from the outside that reform efforts were started at UNAH. In particular, once the National Congress (in connection with the work on a new law for UNAH, see below) became convinced about the importance of reforms, it became a strong supporter. It was only natural that UNAH was selected as the target point for the efforts.

UNAH is by far the largest university in Honduras, with 9 campuses, more than 80,000 students, and almost 3,500 teachers and 3,000 administrative personnel. About 4,000 study in the UNAH Open University (SUED, Sistema de Educacion a Distancia). The main campus at Tegucigalpa is much larger than the other 8, with 54,000 students. The organizational structure of UNAH is shown in Annex 2.

Particularly in view of its size and the special obligations given to UNAH, it is unfortunate that it has severe weaknesses in several key areas, from financial management to research and education. However, the National Congress has demonstrated an impressive will to improve this situation. It was a major step forward when a new law, “the Organic Law for the University”, was adopted in 2004. This law emphasizes the need for extensive university reforms and demonstrates that the Government is clearly aware of the potential benefits of a stronger higher education sector in the country. Among other, the organic law reduced the earlier, extensive power of students in the UNAH government. During the first years of the reform activities a Transition Commission (TC), nominated by UNAH constituencies, has been in charge of the implementation of the reforms. Its mandate expires by the end of May, 2008.

The Sida-SAREC cooperation. Sweden has played a significant role during the preparatory activities for the reforms and continues to do so. Sida-SAREC started preparing its cooperation with Honduras within Higher Education and Research in 2001. In June, 2005, a 3-year cooperative project was started, and UNAH was selected as the target point for these efforts. During the 3-year pilot phase the following activities would be strengthened through the cooperation with Sida-SAREC:

- Reform of university management, including financial management, auditing, and administration
- Reform of university research
- Reform of educational practices
- A number of individual research and research training projects within civil engineering and microbiology, as well as in social sciences
- University ICT systems and use, including an ICT Master Plan
- Upgrading of the library, including an INASP subscription
- Assistance with the planning and evaluation of the reform process

The costs to Sida-SAREC of the cooperation during the 3-year pilot phase are expected to be:

2005–06 11.30 M SEK

2006–07 13.75 M SEK

2007–08 14.50 M SEK

for a total of almost SEK 40M (HNL 100M). Almost half of this amount will be spent on ICT activities, including a substantial amount for hardware installations; research projects in Engineering and Microbiology will receive over SEK 12M, and reform administrative reform activities well over SEK 5M.

A number of studies have already been carried out in support of the reforms and the cooperation with Sida-SAREC. These include, among other, "Institutional Reform Projects of UNAH" by Yarzabal (2003). An extensive support effort by Sida-SAREC has been provided through the international auditing company KPMG, especially within management, including the handling of external funding. This has led to a number of progress reports from KPMG, the latest from May, 2007, and subsequent replies from the UNAH management. The follow-up efforts by Sida-SAREC have taken place in coordination with the plans defined by the Transition Commission.

In addition to KPMG, two other consulting companies have been employed through the Sida-SAREC cooperation. These are ILAEDES, which worked with the selection of research projects (see Yarzabal, 2003) and the local company, CEDOH, which worked with a range of other matters, especially the selection of consultants for specific tasks in connection with the reforms. Both were competent and provided good services, in spite of some minor, mostly technical difficulties.

Research at UNAH. As the leading university in Honduras and with its special role within higher education in the country, UNAH should also be a research leader. But it is not well equipped for this – less than 20% of its teachers have research degrees, and most of these degrees are at the Master level. Estimates of the number of PhD holders among the UNAH staff indicate that the number is low, probably well below 100. A recent study at UNAH has shown that about 100 university teachers out of 3,500 are research active. The number of research active teachers corresponds to 1 per 800 students, well over 10 times below the ratio in more developed countries. Nevertheless UNAH has some graduate programs, including a few PhD programs (in social sciences) and 37 Master programs.

About 70% of the research activities take place within biological and medicinal subjects. In many fields, the interaction between research and educational activities at UNAH as well as between UNAH research and real life needs in Honduras, is not satisfactory (see Fig. 2 in Chapter 5). Thus, there is a strong need for updated curricula that integrate education and research, and for increased cooperation with partners outside academia in essentially all fields.

2. Comprehensive and Innovative Reform Plans

Innovative and advanced reform plans. The background for the reform plans at UNAH is the new Organic Law for the University, which was adopted by the National Congress in December, 2004, and the establishment of the 9 (later reduced to 7) member Transition Commission (TC) to implement the reforms. The TC has a visionary Chairman and some highly competent members, although some of the members, due to other obligations, are probably not able to work very long hours compared with the huge task given to the TC. The TC has not to any great extent tried to form strategic alliances with groups within UNAH or to delegate tasks to other reform forces on campus.

The National Congress is still a strong and very important supporter of the UNAH reforms. Its “Follow-up Committee” has been active in several contexts and acts as a watchdog for the reform movement.

The TC has defined a set of guidelines for the new UNAH, and thus for the reforms, which contain 9 key priorities (Annex 3). Among these, research has a prominent position and so does the use of research and knowledge in general, in the solution of national problems in Honduras. It is also clear that the strengthened research activities must be used for an upgrading of education at UNAH (and other universities in the country).

Compared with similar attempts elsewhere in the world, the reform guidelines for UNAH are remarkable in several ways. They are very much to the point and seem strikingly modern – such guidelines would, in many countries, be written by and for academics and would be dominated by a quest for purely academic excellence. In Honduras it is made clear that knowledge must play a significant role in the solution of the many severe problems and challenges in the country, including the widespread poverty. One consequence of this is that the guidelines agree well with Sida-SAREC goals.

Other countries have successfully gone through somewhat similar reforms when they were in a difficult situation, for example South Korea and Singapore, more than 30 years ago. The highly successful policy in Singapore included, for example, strong incentives (“orders” may be more precise) for university researchers to cooperate with local industry, and in Korea, very strong financial incentives were given for industry to take advantage of university research. In these cases the political will, not only to survival, but also to knowledge based economic development (including long-term poverty reduction) was very clear and the pressure from politicians was strong for many years. It remains to be seen if this will also be the case in Honduras.

The involvement of Sida-SAREC at this time is important, far beyond the economic provisions, since it provides a range of “healthy demands” to UNAH, e.g. with respect to the completeness of the research system, timing, peer reviews and other evaluations, international standards, etc.

Will the reforms succeed? There are several conditions in favor of a success of the reforms:

- The present political will to reform higher education and research
- the agreement that knowledge must be a key element for the development of Honduras
- good opportunities for national economic support for university research; complete donor dependence is not a threat at the moment
- many talented students
- many academic staff members interested in an expansion of their research activities
- many unsolved national problems, for which knowledge based solutions may be efficient, also on a fairly short time-scale
- Government willingness to finance increased research activities, as well as university-society co-operation at UNAH
- fast expansion of UNAH to more remote parts of the country
- the cooperation with Sida-SAREC, especially the strict demands which are associated with this cooperation
- potential future support from other interested donors

Unfortunately, there are also considerable obstacles:

- The TC has only one year left of its mandate. Will UNAH be able to continue the reform efforts on its own?
- resistance against almost any change from many labor and student organizations, which do not realize the necessity of the reforms and often prefer strikes to dialogue
- insufficient team spirit in many UNAH departments – especially in the administrative supporting units
- traditions for an excessive and inefficient, but also powerful university bureaucracy
- weak research traditions; insufficient understanding both at UNAH and in the Honduran society (media) of the importance of university research
- few active researchers at UNAH (1 per 900 students)
- insufficient research infrastructure, especially in laboratory based fields
- lacking evaluation procedures for university staff within administration, education, and research
- frequent isolation of staff, lack of internal cooperation, duplication of efforts in spite of the scarcity of funds
- lacking traditions for university/industry and society cooperation

The TC has so far concentrated on specific, practical problems, in some cases with considerable success, and has not had much time to consider strategic issues. It has worked primarily through the so-called Working Group, consisting of the UNAH Rector and top administrators. However, more frequent contacts (at least weekly) with this Group may be necessary. As the end of the TC rule, in mid-2008, comes closer it is increasingly important to concentrate on strategic opportunities. In particular, it may be necessary to mobilize and empower the informal “friends of reforms”, both on campus, e.g. the groups of research active teachers, and in the media.

So far, the TC has not to any large extent delegated authority to other groups outside the Working Group, but will probably have to do so in the future. Already today, many members cannot spend much time on the reform work, thus strong allies are required. This is becoming even more necessary near the end of the TC mandate, when especially the office of the Rector and other constructive groups at UNAH must be given the strength to continue the push for reforms on their own.

3. Management Reform

Budgeted support for 2005–2008 through the Sida-SAREC cooperation: SEK 5.7M

Financial Management. Improvement of the excessive and inefficient UNAH administration, especially within financial management, is a key issue in connection with the administrative reforms at the university as well as within the cooperation with Sida-SAREC. Without a reliable and reasonably efficient financial handling of external support, it will be very difficult for UNAH to attract and benefit from any kind of bi- and multilateral donor support. There is, in fact, little doubt that other external donors than Sida will consider supporting UNAH once such problems are solved and some promising research outcomes have been demonstrated. Also the usefulness of Government funding will be re-

duced as a result of inefficiency in the financial management. Thus, in several ways, the management support within the Sida-SAREC cooperation is an important pioneering effort.

For a long period, the international auditing firm KPMG has acted as a leading consultant for the UNAH management under the Sida-SAREC cooperation. It has performed revisions of the UNAH financial management in 2004 (two times) and quite recently, in 2007, when it had planned to make a real test of the financial management, but found that UNAH was not yet ready for this (KPMG, 2007). KPMG has acted as adviser for the Working Group under the Transition Commission on these and related matters during 2006 and until March 2007. Its direct counterpart at UNAH has been the Working Group, especially the Commission for Management Control, the so-called “Control Commission”. In spite of a major effort by KPMG and some progress, the present status of the financial management is far from satisfactory.

After the 2004 revisions KPMG recommended that the Sida funds for the time being should be handled by outside organizations, and this is what mainly has been done since then. The funds for the research projects have until the end of 2006 been managed by Uppsala University (civil engineering) and Karolinska Hospital (microbiology), and the funds for the IT development at UNAH by the organization SPIDER in Sweden. This has worked well with only minor problems and delays (for a Malaria project, see below).

The last revision took place in February and March, 2007. Based on the outcome of this, KPMG concluded that the UNAH administration is still not ready to take over the responsibility of handling the Sida-SAREC funds (KPMG, 2007). This is a severe problem for both UNAH and Sida-SAREC; the relatively fast upgrading of the financial management capability at UNAH was a key element in their cooperative agreement, and the unsatisfactory performance is likely to influence the Sida-SAREC policy with respect to UNAH.

A test was recently performed, in which UNAH was made responsible for the management of SEK 357.000 of the funds for individual research activities within the Sida-SAREC cooperation. It was agreed that the test should start in December, 2006, but the result was quite disappointing. Many of the researchers and students, as well as Swedish partners, who were affected by the test, have concluded that the outcome was not satisfactory at all. However, some have pointed out that the timing was not ideal, since December–January is a vacation period at UNAH, and furthermore that the researchers were poorly informed about how they should proceed and that the test was poorly prepared in general by UNAH. Many of the researchers are used to rely on last minute improvisations instead of long-term planning. Some requested, for example, travel grants a few days before the wanted departure. It cannot be excluded that a new, better-prepared test may yield a somewhat more satisfactory outcome.

In a meeting with the Control Commission an attempt was made to understand the seemingly extensive bureaucratic problems in simple terms. In most administrative systems the purchase of an item, for example an air ticket, is a simple, 2-step process (when funds are available). Presently at UNAH, this action might require 30–40 steps with several signatures and stamps along the way. The Control Commission explained that this was partly due to complicated Government regulations, which had to be followed, and partly due to a wish to prevent corruption and misuse of funds. However, most would agree that the latter intentions would be served much better by a simple, transparent process.

Another problem mentioned was that the law did not allow UNAH to make purchases abroad, something that clearly would create major problems for researchers in any small country, and especially in a developing country, but this obstacle did not explain most of the observed delays. Interviews with other experts confirmed that while it may not be impossible for UNAH to make foreign procurements, it will be necessary to go through extremely complicated procedures in order to do so. This is highly inconvenient and must be changed as soon as possible. Especially laboratory researchers may be expected to regularly have needs that cannot be satisfied in the domestic market.

Observations and views of the researchers. This report will not go into the details of the management and accounting procedures that are dealt with thoroughly in the KPMG reports and the specific recommendations in them. The most recent one (KPMG, 2007) was presented in early May, 2007; a reply from the UNAH management should have been submitted in late May, but it has been delayed. Instead, the consequences for the research activities at UNAH of the elaborate, lengthy, and inefficient bureaucratic practices, as observed by the researchers, will be discussed.

The research groups, that received support through the Sida-SAREC cooperation, all agree that the delivery of purchases, ordered through UNAH financial management system, was much too slow. In view of the fact that specific funding was available, this seemed unacceptable to most. In some cases, when a delay would have had very severe consequences, the researchers had to pay on their own and hope for a later refund (which has normally been given). In a specific case, work in a Microbiology laboratory had to be stopped, not because of a lack of funding, but because the needed consumables had not been purchased and delivered in time. In a very recent example, 2 graduate students that were to leave for Sweden in May, 2007, received their tickets only 2 days before the scheduled departure day, leading to unnecessary additions to their worries about the long travel. However, the fact that the tickets were produced just in time may be an indication that it is possible to speed up the processes if sufficient pressure is applied.

It is remarkable that several researchers indicated that a strengthening of the financial management at UNAH was an important issue for them, and that they would accept some hardships, if these were part of a learning process for the UNAH bureaucracy. It may be added that the disbursement of funds through Swedish counterparts generally (with only a single exception) has worked well.

Why concentrate on input control and neglect the much more important output control? The huge effort made in order to evaluate and validate a research investment in the input phase leaves little time for the, by far, most important evaluation, that of the outputs and outcomes of the research investments. This kind of evaluation is hardly performed at UNAH; at most a report is requested and filed. Clearly, a research (output/output) evaluation competence must be established and used at UNAH. This would provide the researchers with new incentives and the university management with a constructive accountability measure for individual projects. Such a transition might also make it easier for the bureaucracy to accept a less complicated input control.

The difficult transition from a teaching to a research university. What are the main reasons for these extensive bureaucratic problems? Similar problems have been observed elsewhere in such situations, for example in Bolivia (Thulstrup et al, 2006). First of all, the process a teaching university must go through in order to become a research university, is difficult and creates large number of new requirements to the administrative system. The old procedures will often no longer be satisfactory. For example, in a teaching university the demands to management are usually almost the same, year after year, with only minor modifications. If, for example, the chairs in a classroom have to be replaced, this will be known long in advance, and a delay is not disastrous. In a research university new needs and demands appear all the time, and often require administrative action on a short notice. An essential research instrument may break down, supplies may run out earlier than expected, a new research activity may get started, or the need for a visit with research partners elsewhere may suddenly appear. It is clear that this is an almost completely new situation for management.

Also a power struggle? Furthermore, it cannot be excluded that it is difficult for the university management to give up the power they have held so long, in order to take on their new role as supporters, even servants, of those producing the key UNAH outputs, especially research results, research training, and education. Sticking to very complex procedures and rules, poorly understood by the researchers, may help preserve the power of the bureaucracy, while simplicity, accountability and transparency in the financial management will give all interested parties insight in what goes on. It is likely that this situa-

tion is not popular within the traditional bureaucracy staff. One may say that for them there are disincentives, rather than incentives, for a transition towards simplicity and transparency.

Self-evaluations. It is highly disappointing that management (e.g. the Control Commission) did not take part in the self-evaluation exercises which all recipients of support under the Sida-SAREC cooperation was requested to perform in the spring of 2007. Most of those who took part in them found it very constructive and useful; a summary of the self-evaluations of the research groups is now available in English (Lara-Perla, 2007). It is not clear why management, receiving a contribution well above SEK 5M from the Sida-SAREC cooperation, did not go through the same exercise.

Nor did management produce the annual work plans and progress report that other projects must deliver. Instead the Control Commission has earlier given detailed answers to the reports from KPMG. Producing their own plans and reports would also have been a very useful experience for management and (again) it is not clear why they have not been produced. It seems that the TC has not acted as forcefully in connection with the management reforms as the situation required. As mentioned above, the replies to the most recent KPMG report had not yet been submitted by mid-June, although there was an agreement with Sida-SAREC about a May 25 deadline for this. Clearly this calls for action on behalf of the TC.

A lack of outside competence? It may be a problem that the Control Commission consists exclusively of persons recruited within the UNAH bureaucracy. It is understandable that it may be difficult for them to start using new (although much simpler) procedures within a short time-span and, especially, to accept and understand their (new) main role as providers of research and education support. However, in spite of several attempts, it has not been possible for the TC to convince highly qualified administrators from the outside world to accept and stay within these tasks. Such outsiders were not always welcomed by their colleagues (and in some cases, former teachers).

Box 1. A key issue: Team spirit and loyalty

In general, the team spirit and loyalty of UNAH staff members are directed towards a labor union or groups of colleagues performing similar services elsewhere within UNAH, not towards the groups in the faculties or departments that produce common outputs within education and research. Thus, for example, secretaries in engineering may consider it more appropriate to support secretaries in other UNAH faculties than to support a multifaceted team within engineering, trying to produce good and useful research results and well-trained engineers. The central management at UNAH generally knows little about outputs and do not feel that they contribute. Nor do the majority of students feel that they are part of a team – they are mainly being taught and rarely obtain a deeper insight, for example as members of research teams.

There is no doubt that inclusion of individual, both centrally and locally placed, management staff, as well as students, in informal teams targeting specific outputs within research, education, or community service might have a positive effect on their performance. Similarly, an establishment of team pride in connection with the production of research results or new and better graduates might have a significant effect. This would, in particular, be true if this pride was felt by all, from locally placed secretaries to central managers, who, in an efficient way, helped provide the needed support for the UNAH output activities.

Team spirit. In order to improve the relationship and cooperation between different groups at UNAH, and specifically between researchers and bureaucrats, it may be necessary to give management some credit for UNAH outputs in education and research. In other words, management should feel that they are part of productive teams at UNAH, and should, for example, feel proud of their own contribution, when researchers are successful (Box 1). It is equally important that researchers feel that they can trust management as part of their teams.

As mentioned earlier, research in one of the Microbiology laboratories recently had to stop because some consumables, for which funding was available, had not been purchased due to slow financial man-

agement. However, this situation did not seem to cause any major embarrassment among the financial management staff. This is clearly unacceptable – management should feel responsible in such cases and try to make sure that they are not repeated.

Need for continuous follow-up. It is clear that the management reform work requires considerable support, both from the TC and Sida-SAREC. This would, among other, include demands of frequent (at least quarterly) progress reports.

Specific reform tasks. The TC has two special tasks to be taken care of during the next 12 months. It must perform an evaluation of all UNAH staff, a major challenge, which can hardly be handled at the national level. Furthermore, it must organize a major, international meeting on higher education – SEK 1M of the funds from the Sida-SAREC cooperation has been reserved for this purpose.

Organizing this meeting is an obvious opportunity in several respects:

- It may help disseminate useful higher education reform experiences from other countries, both in Latin America and elsewhere
- It may help strengthen cooperation between universities in Central America
- UNAH administrators, teachers, and researchers may find useful foreign partners that may be able to assist them in the continued reform work
- preparing the meeting may help create a team spirit and pride within UNAH, as the organizer of such an important event
- the meeting may create constructive publicity within Honduras about the UNAH reforms and the opportunities within knowledge based development

4. Reform of University Research

Improved funding for university research. UNAH is receiving support through the Sida-SAREC cooperation for specific research projects as discussed in more detail below. So far, no other major external donors are active (although some minor grants have been provided), but several are watching the Sida-SAREC cooperation project and may join the efforts if the present pilot project works out well. In this situation it is most constructive that UNAH has been and will be provided with additional Government funds through the TC for a further upgrading of the research activities as well as for research management. In fact, among the 9 key target areas of the TC (Annex 3), research has been given the largest budget.

In spite of the management problems discussed above, some real progress has been made within the UNAH research management. A university research manual was presented in November, 2006, and although it still may need some refinements (see KPMG, 2007) it is in use. A number of active researchers among the UNAH staff (about 100) have been identified. The efficiency with which the research manual was produced is in contrast to the parallel work on the general administrative manuals, which are still far from completion.

As indicated above, the TC has increased the annual budget for research at UNAH from the usual level, about HNL 10M, to more than HNL 20M of Government money for 2007. Most of the funds will be distributed through a number (around 6) of research centers. A research center will receive about HNL 2M in 2007, covering some staff costs, research expenses, and the publication of a center journal (an opportunity that must be used very carefully, see below). Another high priority is foreign MSc and PhD training for young staff members (as it is presently also done in specific fields within the Sida-SAREC

cooperation). HNL 7M has already been spent for (foreign) research training grants given to younger staff members, while older staff members will receive research training at home, e.g. by means of the Internet. Finally, also individual applications for support may be submitted to the Research Director.

Those receiving grants will not only receive grants for research costs, but may also obtain a salary increase or a relief from educational duties, partly in order to secure their full time effort. Such measures are often likely to be a necessity in order to convince researchers to concentrate fully on their research, instead of taking second jobs elsewhere. This will help get research activities up in speed, and will make them more fashionable at UNAH.

Contrary to the situation in many other developing countries, the increased Government research funding for 2007 is able to match the total external donor support for research (primarily the Sida-SAREC contribution in 2007). This is significant; it prevents excessive donor dependence and, because of its design, the internal research funding may help identify new, worthwhile research activities at UNAH. However, the amount available for research support in 2007 will hardly be enough in the future; in order to create a wide-ranging research culture at UNAH the amount of Government support must be increased further over a fairly short time-span. At the moment, it is expected that the funds available for 2007 will cover (or even exceed) all reasonably good research applications for the year. However, it has been seen in other countries, e.g. in Indonesia in the early 1990s (Koswara, 2006), that when attractive research funding becomes available in an environment of mostly inactive university researchers, the number of active researchers may grow very fast.

Research with real life benefits far beyond the ivory towers. It is a clear aim of the UNAH research policy to encourage active involvement of university researchers in the real life needs of Honduran population. This is a highly commendable aim; usually weak research environments tend to concentrate on ivory tower activities alone (Fig. 1). It is also important in other ways, since it may improve the recognition of university research in wider circles within Honduras and may improve student and staff motivation. However, it should not lead to reduced targets with respect to academic research quality; making directly useful research is as academically demanding as pure basic research. In any case, research, which is not of an acceptable academic quality, is not likely to be useful.

The positive intentions have already been put to a test. In October, 2006, the National Congress asked UNAH to contribute more directly within poverty reduction activities. As a result, 47 poor municipalities in Honduras are now being assisted by UNAH. This is done through about 100 projects, many of a research-like nature, within a wide range of disciplines. Most importantly, the Government is supporting these university-community efforts through a special HNL 80 M grant.

Before the project:



After the project:

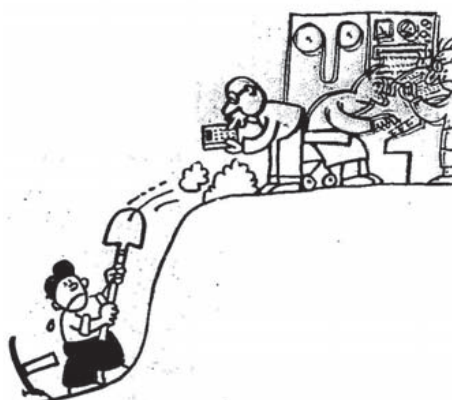


Figure 1. A typical situation in a developing country: Conditions in society (real life) do not change at all after a major capacity building project at the university level. (Kornhauser and Kos, 1992, by permission).

Weak research infrastructure. There are several problems to overcome for researchers at UNAH, especially in laboratory subjects. First of all, the research infrastructure at UNAH is weak. Although most buildings are reasonably new and some construction of new university buildings is going on, laboratories tend to be poorly equipped, without much modern research (and educational/training) instrumentation.

The library has many old monographs and various source books, but newer material is rare, and up-to-date research journals are not found at all in many fields. However, agreements exist with libraries in other countries, e.g. in Spain, and some services may be provided to UNAH researchers. Fortunately, the development of Internet access to journals is now progressing after a difficult start: A team from INASP (the International Network for the Availability of Scientific Publications) gave 2 purely theoretical courses, without sufficient practical content – at UNAH these efforts are generally considered a waste. Now, the hardware opportunities for Internet access will soon be a reality (see below) and new provisions of more targeted training within Internet literature access is in progress. These efforts are considered well timed and much more useful. In general, with the improved ICT opportunities, it will now be possible for the library to subscribe to specialized, particularly relevant databases.

Insufficient research dissemination. Dissemination of research is a crucial activity, both for an upgrading of the research quality and to locate research partners elsewhere, but also in order to make the research useful outside the ivory towers. The publication practices at UNAH are generally weak – international publication is rare, although it is already done regularly in a few departments, for example in the Microbiology Department. Furthermore, the domestic research journals are weak and do rarely provide significant support for inexperienced authors. The university library has so far mainly aimed at supplying UNAH staff with their reading needs, not their writing needs, and does not even have an overview of the published papers and reports by UNAH authors.

Publication of research results by active researchers is a very important activity, and it may have several purposes (Box 2). Inexperienced researchers often need help to get started within these activities, but once they become accustomed to the different dissemination channels, little assistance, beyond the purely technical, e.g. language correction, is necessary. Courses or workshops on “How to write a paper” or “How to publish a paper” have often been very useful during the first phases.

Box 2. Why publish?

Publication of research results or methods is important for several reasons, both idealistic and more selfish ones. The dissemination may take place in either international research journals or regional/national journals that are read by users of research based knowledge. Recently, inexpensive Internet publishing has been added to the traditional journals in paper form. In any case, the target groups consist of:

- International experts in the given field, for quality control and exchange of information. This is usually done through subject-specific international research journals². This is also how new researchers are accepted in field-specific, informal networks
- local users of the research results, such as small industry, authorities, local communities and others. This may best be done through local or national publications, in-service training, seminars, or through the media

In both cases it is important that the journal, in which the research is being published, reaches as many relevant readers as possible (do not hide useful research in very small journals!) and that it has helpful editors and reviewers, especially in the case of inexperienced authors.

² Note that some of the best international research journals as a standard demand “publication fees” from authors. It is only very rarely necessary to pay such fees. If a request is sent to the editor, the fee will almost always be waived without any problems. Still, many developing country authors pay such fees or give up publishing in such journals because they believe that the fees must be paid.

Dissemination from university research in Honduras and specifically from UNAH falls short in both of these categories. It is an added problem that there is a lack of good (and author-supportive journals) in the country/region – it seems like an obvious joint task for the Central American countries to establish such international journals. In the Nordic countries the situation in many science fields was similar 30–40 years ago, but the state-funded Nordic Publishing Board managed to merge a large number of more or less useless local or national journals into a small number of strong, international journals (Thulstrup, 2002). If Central American journals could go through similar processes, it would be a major boost to research in the region. In Latin America, Brazil is presently going through a similar process.

The UNAH library might have to accept a new role, as a window for quality research at UNAH, for example by dedicating a centrally located shelf to research papers authored by UNAH staff. This would help create pride and excitement over UNAH accomplishments and would help spread knowledge about the many opportunities associated with active publishing of research results. The library might also host courses (e.g. on “how to write/publish a research paper”) that help inexperienced authors get started. Such courses have been efficient in many other countries.

In general, the library may be in a central position to help educate and upgrade UNAH staff in relation to the new opportunities (ICT) and needs (publishing), which is in good accordance with the fact that UNAH librarians have a formal status as teachers.

5. Reform of Education

Management of educational activities. The management of the educational activities is gradually being modernized, computerized, and generally improved. As mentioned above, the educational activities are fairly continuous and management of them is therefore less demanding than management of research activities, including the handling of funds for these. It is difficult to list clear indicators for the progress within the educational management reforms, but the general impression is that they proceed as planned, although not necessarily very fast. Specifically, the relevant administrative manuals are approaching their completion.

Modernizing the educational technology. As part of the ICT component of the cooperation between UNAH and Sida-SAREC, educational technologies and opportunities are in the process of being greatly upgraded all over campus. Both hardware and training is being provided in order to support various educational activities, from simple campus-wide communication to multimedia- and e-learning. However, also more fundamental educational reforms will be made.

Producing useful graduates. Evaluation criteria for higher education programs have shifted in recent years, away from a detailed study of the curricula to studies of how the graduates from the programs perform in the labor market, after graduation. In real life it is not only subject matter competence that counts; other skills, for example within communication and teamwork, are among those rated highest by employers (Thulstrup, 2001). Also innovative and critical skills are very important in life after graduation. Such abilities are not developed efficiently by educational strategies that give high priority to lectures and memorization of textbook material. Furthermore, traditional academic emphasis on ivory tower subjects does not prepare the graduates sufficiently well for the real life problems they meet after graduation, real life demands must be included in the curriculum.

It is therefore important that curricula are reformed at UNAH, and a major effort is taking place to this end. Inclusion of real life concerns, for example poverty reduction and health, are important issues in

this connection. Research plays an important role in this connection; experience shows that major benefits may result from student activities within the area in Fig. 2, where research, education and real life activities overlap.

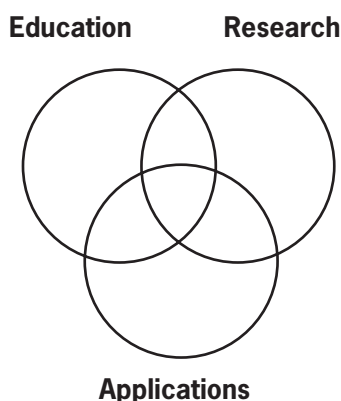


Figure 2. The relation between Education, Research and Applications in efficient curricula (Thulstrup, 1999)

In a way, UNAH has exceptional opportunities for integrating real life applications within the educational activities, since a large share of the students are working in real jobs and many consider the university studies as in-service training. Creating an overlap with research is more difficult, because of the limited number of research activities at UNAH. However, the Government-financed 100 projects targeting poor municipalities in Honduras, mentioned above, might offer unique opportunities for bringing university education closer to real life as well as to research-like activities. The internal, Government sponsored research grants, which will become available later in 2007, might offer opportunities for involvement of undergraduate students.

Two severe weaknesses of traditional, lecture-based curricula is that they encourage memorization among the students and that they do not leave them much time to work on real-life related problems. The latter problem might be solved, for example, through the replacement of some courses with project based learning (PBL) activities, while the former may be greatly reduced by introducing open book examinations. In order to strengthen such educational reforms, it may be necessary to expand support activities targeting the educational activities at UNAH, e.g. through a series of workshops.

First-degree students at UNAH must perform community service during their last year, but these activities may be replaced by a research project. At the moment only very few students do research projects and this seems like a wasted, golden opportunity. With a strongly increased research activity at UNAH it may become possible to let a much larger number of undergraduate students have the unique and very educational experience of performing their own small research project. By letting the students do this in small groups, and requiring formal (both oral and written, also in electronic form) presentations of their results, both team work and communication skills may be improved.

Finally, it is a widespread, major problem at UNAH that many students have been poorly prepared in key subjects before they enter the university, or they have been in the labor market for an extended period before they enter UNAH and are no longer up-to-date within secondary school subjects. This kind of problem should not be handled by neglecting it, as it is often done; this will lead to higher drop out rates and delayed graduation. Instead, the shortcomings should be carefully analyzed – experience shows that the problem may be significantly reduced by offering special introductory courses, upgrading the students to the levels, which are required in the regular courses (Thulstrup, 2001). A planned, new entrance test at UNAH may also help clarify the demands for future students.

6. Individual Research Projects

Individual research projects. The targeted support through the Sida-SAREC cooperation for an improvement of the financial management at UNAH may also be seen as an attempt to indirectly support active research at UNAH in several ways. For example, the present delays in connection with purchases made through the UNAH management are a direct threat to the research efficiency and must be removed. Similarly, if the handling of external funds is improved, other donors may become active and external funds will become more easily available. Thus there are many indirect benefits for active research of a more efficient management at UNAH.

A more direct support for research at UNAH within the Sida-SAREC cooperation is the strengthening of the research capacity in a number of specific fields, as described below. The strengthening includes both training and infrastructure. The training takes place in cooperation with Swedish universities and is expected, among other, to lead to Swedish graduate (mainly PhD) degrees for selected, young staff members and students from UNAH. Their studies are performed in a sandwich mode, in order to preserve the ties with UNAH and in order to facilitate work on key problems within Honduras, as discussed below. The infrastructure support will not only improve the laboratory and field work facilities at UNAH; equally important, the ITC system at UNAH has been evaluated and an ICT plan developed that will lead to a considerable upgrading (see below). This will make it possible to take better advantage of the extensive ICT opportunities, not only by researchers, but also by staff and students in general, within research and management as well as internal communication.

Selection of projects. An extended dialogue between UNAH and Sida-SAREC (Yarzabal, 2003) led to an agreement about a fairly limited list of research and ICT projects that initially would be given support. These include the following specific research fields:

- Engineering, specifically Hydrology related to the Choluteca River Basin
- Engineering, a landslide safety research project
- Microbiology, TB
- Microbiology, HIV
- Microbiology, Malaria

Some support (about SEK 1M) has also been given to a Social Sciences project, dealing with municipality, decentralization and development.

Important pilot projects. Clearly, this list above of research projects is only a modest start for UNAH. Substantial upgrading of research is required in numerous subjects. In addition to the funds obtained through the Sida-SAREC cooperation, UNAH has been provided with a substantially increased research budget for 2007 through the TC, as mentioned above. Nevertheless, further increases will be required in the coming years. In the following, we shall only look at the short list of “pilot projects”, which have received relatively generous support through the Sida-SAREC cooperation. These projects may serve several important purposes. They may:

- Create experience at UNAH on how to best strengthen research in specific fields
- train present or future UNAH staff members in order to strengthen education and research in specific fields at UNAH
- build up research infrastructure in specific fields at UNAH

- create experience elsewhere at UNAH (within management, finances, library, etc.) on how to deal with active and demanding, international level researchers
- demonstrate the benefits of active research, both academically (e.g. as support for courses at UNAH), in relation to the Honduran society (by helping solve real societal needs), and as “flagships” for UNAH
- provide experience on the opportunities and problems in research cooperation, including graduate training, between foreign (Swedish) institutions and UNAH
- serve as role models for other research groups at UNAH
- create good publicity and even excitement within and outside UNAH about research activities, research training, and research results

High priority for staff training. The emphasis in the Sida-SAREC projects is placed on training, but also some upgrading of research equipment is included, in cooperation with the advisers of the graduate students. Several students have started degree (mostly PhD) programs at Swedish institutions. This means that the students must satisfy formal Swedish requirements for these degree programs, including, for example, a minimum number of papers published or submitted in international research journals. Such strict requirements may have a very healthy learning effect within UNAH.

The studies take place according to the sandwich model, in which the student spends some time, usually at least several months, in Sweden, then spends a similar period at home, before returning to Sweden. There are important advantages associated with the sandwich model for research training (Box 3).

Box 3. The very useful sandwich model for foreign research training

The sandwich model for overseas research training has turned out to be highly efficient compared with the traditional, overseas graduate training procedures, in which the students spend several years without interruption in a foreign institution. Among the many important advantages associated with the sandwich model may be mentioned:

- Contact with the home environment is preserved, and gradual upgrading of this environment may take place during the studies
- it becomes easier to work on project of national interest in the home country and it is possible, for example, to perform field studies during the visits at home
- infrastructure improvements at home may be better coordinated with the research plans after graduation of the students
- while the graduate students are abroad, they may become familiar with instruments similar to those to be procured for the home university
- it allows involvement of not only a foreign, but also a domestic PhD adviser, thus expanding the learning opportunities in the home country

The studies are generally targeting PhD degrees, although occasional uncertainty still exists about the possible inclusion of an MSc along the way, partly caused by a change of rules at one of the Swedish partner institutions. This is hardly a major issue; if an MSc should be included on the way, it would help satisfy needs and requirements for a following PhD degree. In general, the individual research projects have had a good start, characterized, in particular, by the availability at UNAH of excellent young talents for the graduate training programs.

Swedish partners. The cooperation with the Swedish partners is, in general, very satisfactory. It is expected that the Swedish graduate advisers will accept wider roles, including that of adviser for research planning and infrastructure development within their special field at UNAH. In fact, the Swedish advisers

have already had to take care of the financial management: Due to the weaknesses in the UNAH financial management, most Sida-SAREC funds have been distributed through the Swedish partners. This has worked better than the attempts to let UNAH manage the funds, but is not ideal either. As mentioned above, several UNAH researchers indicated a willingness to go through some hardships, in order to allow for a learning period within the financial management groups at UNAH. However, it is clear that their patience is not unlimited.

Selection of graduate students. There are no clear systems or criteria for the selection of students for Sida-SAREC sponsored graduate training, except that they should be young (< 35 years of age). So far, the departments of Civil Engineering and Microbiology have selected graduate students based on their qualifications and interest, for example through interviews. In the Microbiology Department the selection is facilitated by the fact that 10–15 undergraduate students each year perform a research project. However, both departments would benefit from increasing the recruitment base (especially in Civil Engineering) by letting more undergraduate students take part in research projects, and from introducing more formal (but still non-bureaucratic) application and selection rules when student candidates for graduate training are chosen.

Gender imbalances. It seems clear that both the Department of Microbiology and that of Civil Engineering suffer from gender imbalances (although in different directions; the average is quite good!). It is often assumed that an even gender balance improves efficiency in research projects and it may be worthwhile to try to improve the balance through a widening of the recruitment base for future graduate students. It would also be a pity if, for example, the promising research activities within Microbiology did not benefit from more of the male talent in the country!

Self-evaluation. The research project participated in the recent self-evaluation and found the exercise highly useful. The results are summarized in (Lara-Perla, 2007).

6.1 Civil Engineering

Budgeted support for 2005–2008 through the Sida-SAREC cooperation: SEK 4.125M

The purpose of the engineering research projects is not only to create competence in the respective fields at UNAH, but also to contribute directly to the solution of important problems in Honduras. The cooperative partner is Uppsala University, where 2 Hydrology students have progressed well in their PhD programs. A third student, within the Landslide project will leave for Uppsala in the near future.

A very important, and highly positive, quality of the research programs in Engineering is that the present graduate students are secured proper jobs at UNAH after graduation. Furthermore, their documented qualifications (degrees, published papers) will be reflected in their future position and salary. Such issues have caused severe problems in other Sida-SAREC cooperative projects (e.g. Ethiopia, Bolivia, see, for example, (Thulstrup, Munoz, and Decoster, 2006)).

It seems that a stronger involvement of undergraduate engineering students in individual research projects would have several, specific advantages. First of all, the undergraduate students might be able to help with the data collection while the PhD students are in Sweden, thus helping solve a real problem in the research projects. Secondly, involvement of undergraduate students would provide a convenient recruitment system for future researchers (and graduate students). Thirdly, involvement of a much larger number of students would help create badly needed publicity for the research activities at UNAH. Finally, it might lead to changed attitudes with respect to research – through the excitement students feel over their first experience of research processes and outcomes. It would also provide a number of undergraduate UNAH students with the fairly unique experience of being responsible for their own research activities.

The Engineering Department will receive a radio wave connection (later to be replaced by a permanent connection) to the Internet in July, 2007, similar to one very recently provided to the UNAH Medical School. This will be a major, and badly needed, improvement of the electronic communication facilities within Engineering. Furthermore, the planning of a modern Soil/Rock laboratory in the Department of Civil Engineering is in progress.

Hydrology

Two PhD students have started their training at Uppsala University and have already successfully completed most of the required courses. They have also received pedagogical training, and have practiced their educational skill on students from Uppsala University. An exchange project, in which a Swedish PhD student visits UNAH, is also part of the package, and a small team from Uppsala University has spent some time at UNAH in 2006.

The research projects of the students deal with the Choluteca River in and around Tegucigalpa, which it flows through. Some fairly minor equipment (2 automatic rain gauges, stream gauges, and an automatic weather station) have been purchased and installed. The students have, among other, performed hydrological monitoring and data gathering, have constructed a geo-database for the river basin, have analyzed storm flows and rain data, and have set up a water management model for Tegucigalpa.

Some interesting research results have already been obtained and this has led to a specification and slight redefinition of future research plans. Some practical experiences with regard to the operation of the new equipment have also been obtained, from flood damages to a rain gauge, to the cable for the rain gauge being eaten by a pig!

Dissemination of the research results is expected to take place as part of the publication demands of the PhD programs. Furthermore, both students and their Honduran supervisors will take part in an international workshop in Costa Rica in early June, 2007.

Thus the project has basically performed well, although there have been other problems, both on the management side and with respect to the research activities, for example:

- Insufficient IT infrastructure at UNAH; however, this problem is about to be solved already in June, 2007 through an emergency radio connection, in connection with the Sida-SAREC supported ICT project (see below)
- weaknesses in the financial management at UNAH, as well as the required coordination of UNAH and Uppsala University practices. The graduate students had, for example, to live in Sweden without grants covering their living costs, for a period in mid-2006
- insufficient student knowledge in some basic fields, compared with the normal requirements at Uppsala University
- at times, there have been difficulties in the communication between Honduran and Swedish supervisors, partly caused by the above-mentioned ICT insufficiencies, as well as by language problems. The students have had to do much translation between their advisers. Furthermore, it has sometimes been difficult for the Honduran advisers, without much experience in graduate training, to understand the implications of the Swedish PhD programs
- lack of regular and systematic data collection while the students are in Sweden
- occasional low quality of the data, collected with the new equipment in Honduras

While the management problems at UNAH may be more persistent, there seem to be fairly simple, realistic, as well as obvious, solutions for the other problems, many of which are really part of a learning process. Thus the research project is expected to reach its goals without any major delays by 2008.

The landslide safety project

This project has only recently completed a fairly lengthy planning phase. Its goal is to make a geotechnical safety evaluation of the “El Reparto” landslide in the northern outskirts of Tegucigalpa. It contains about 600,000 cubic meters of soil and covers an area of 20,000 square meters. It contains about 450 dwellings of very poor people, who regularly see their homes destroyed, while the landslide slowly approaches downtown Tegucigalpa with a speed that has increased as a result of the hurricane Mitch in 1998.

Specifically, the planned research will include:

- Evaluation of existing data
- design and implementation of a geotechnical testing system
- analytical stability studies
- design and evaluation of possible mitigation measures

The research project is expected to progress along the same lines as the hydrology project; it also has Uppsala University as the partner. The first student to receive graduate training within the project has been selected and will be leaving soon for his first sandwich visit in Sweden. The strengthening of the infrastructure at UNAH will concentrate on the Geotechnical Laboratory, and a plan for required purchases is being worked out.

6.2 Microbiology

Support for 2005–2008 through the Sida-SAREC cooperation: SEK 8.175M

The Department of Microbiology earlier belonged to the Medical Faculty, but was recently, according to its own wish, transferred to the Faculty of Science. Its educational (and research) activities depend a great deal on fundamental courses in science disciplines, such as chemistry, and it would benefit greatly from a strengthening of these at UNAH. The Department has been research active for many years and has earlier received some outside research support, among other from the Netherlands and Canada (which is still active).

The purpose of the microbiology projects is not only to create competence in the respective fields at UNAH, but also to contribute directly to the solution of severe problems in Honduras, specifically in connection with HIV, tuberculosis, and malaria. The cooperative partner is Karolinska Institute in Stockholm, where 3 students already have progressed quite far in their programs. Two additional students will leave for their first visit in Sweden in mid-2007. Several departments at Karolinska Institute are involved.

There is, in general, considerable satisfaction with the cooperation. However, the research activities have not proceeded without problems. The financial management test in December, 2006, meant that the funding from the Sida-SAREC cooperation for the research activities was transferred to UNAH. As a result of this, support for individual research activities has suffered considerable delays. Some laboratory activities have, for example, had to be stopped because of a lack of the needed consumables. Two graduate students who were scheduled to leave for Sweden in early May, as part of their sandwich programs, had to wait for their tickets until two days before the scheduled departure. In other cases, both students and staff have had to pay for such items on their own, and then wait for a refund.

At UNAH, undergraduate students may choose between performing community service and doing a research project at the end of their studies. Each year the Microbiology Department lets all interested applicants (10–15 students) perform such projects. By advertising the research opportunities better, it

should be possible to recruit a much larger number of students for undergraduate research. This would have several advantages. The undergraduate students might be able to produce useful results and may even help with data collection while the PhD students are in Sweden. Their involvement would also provide a convenient recruitment system for future researchers (and graduate students). Most of all, involvement of a larger number of students would help create good publicity for the research activities at UNAH, and would provide more students with a unique, highly motivational educational experience.

While still rather few undergraduate students take part in research projects, the new knowledge obtained through the research already has had a clear impact on the educational activities in microbiology. In itself, this may help motivate more students to do research projects in Microbiology. Especially when the laboratories have become better equipped, it may become possible to increase in the number of students performing regular research projects. Unfortunately, the Department of Microbiology suffers from a severe space problem, which keeps a number of important activities stalled. These include both activities based on new equipment from the Sida-SAREC cooperation, as well as the start of a Canadian supported MSc program. UNAH has promised to solve the space problem and solution has been found, but the implementation seems to drag out unreasonable long.

Contrary to the situation in Civil Engineering, some of the Microbiology students do not have guaranteed positions at UNAH after they complete their degrees. This is an issue that is best solved well before their graduation. The students all seem to be excellent researchers and may receive job offers from other institutions when they are ready to graduate. It is important that UNAH makes sure that such well-trained talents will return.

In addition to the three research projects discussed below, the Department of Microbiology has received support for the organization of an international course on Epidemiology. The construction of an incinerator for infectious and contagious waste, which is produced by the Department itself and others both at UNAH and outside, is presently being planned.

Tuberculosis (TB)

Tuberculosis is a major health problem in Honduras, especially in connection with the HIV endemic in the country. There are 2 sub-projects in the TB research area, both with partners at the Karolinska Institute in Stockholm, dealing with:

- Drug resistance and spread of TB in Honduras
- TB-specific immune responses (recently started)

In both subprojects, the goals are research capacity as well as (practical) analytical capacity building.

The first of the sub-projects have initiated a strong cooperation with the National TB Reference Laboratory in Tegucigalpa. This has made it possible to transfer technology and knowledge to key users in the country and has also led to the organization of a targeted training workshop in 2007 for National Reference Laboratory staff.

The research activities have dealt with an evaluation of a potential detection method for drug resistance; materials (strains) were provided by the National Reference Laboratory, WHO, and Karolinska Institute. A PhD student has progressed well in her studies, within the sandwich format. She has participated (also as contributor) in both national and international meetings, and a manuscript dealing with low-cost drug susceptibility is in progress.

The second sub-project is in its start; an MSc student (who later may proceed to a PhD degree) has visited a TB laboratory in Sweden and the Swedish adviser has visited UNAH.

Important equipment has been delivered for the TB laboratory at UNAH through the Sida-SAREC cooperation, but it has not been unpacked and installed yet, since the proper laboratory space is not available, as discussed above. To wait unpacking is likely to be a sound decision; unpacking research equipment before it can be properly placed has in many cases led to serious problems. A solution, that allows an expansion of the laboratory space available for Microbiology, has been found (see above), but it must be implemented before the equipment will become available for the researchers. It is satisfactory that the warranty period will not start until the equipment is operating.

Drug resistant HIV in Honduras

The knowledge of HIV diversity in Central America is quite limited, and the present project will help clarify some important questions. The aim of the project is, among other:

To perform resistance testing, to study the development of drug resistant HIV, and to establish a quality assurance program for the HIV treatment methodology in Honduras. The project has already produced interesting research results. The preliminary investigation of HIV patients in Honduras showed that development of drug resistance is a potentially major problem in the country. This has led to a modification of the research plans, including an expansion of the groups of patients tested. The project has contributed to knowledge sharing in Honduras, for example through successful seminars for researchers, doctors and other stakeholders within Honduras. In the long term, the project may help identify useful HIV vaccines for Central America.

The first PhD student has progressed well in her studies, using the sandwich model. She has passed courses in Sweden, taken actively part in international and national meetings, and produced the first manuscripts. A second graduate student has just left for her first visit in Sweden.

The HIV laboratory at UNAH has been considerably upgraded with both major and minor equipment through the Sida-SAREC cooperation. In addition, a large amount of consumables for laboratory work have been provided.

Malaria

There is widespread malaria in Northern Honduras and the malaria project, carried out in collaboration with a research group at Karolinska Institute, attempts to provide research results of direct importance for the reduction of human suffering. The main objective is to investigate the existence of an asymptomatic reservoir of human malaria. Collaboration has also been initiated with the National Malaria Laboratory and with the local health authorities in the main malaria region in Honduras; this will help transfer new knowledge to where it is needed in Honduras.

Specifically, the research attempts to:

- Describe the clinical manifestations (signs and symptoms) of infected individuals
- determine the epidemiological characteristics (age, sex, previous malaria attack, time living in malaria endemic area, migration) of symptomatic and asymptomatic individuals
- identify the parasitological characteristics (parasite species, parasite stages, parasitemia) of symptomatic and asymptomatic individuals
- characterize the genotype (PCR) of *Plasmodium* spp. parasites of symptomatic and asymptomatic individuals

There is considerable satisfaction at UNAH with the scientific quality of the partner group at Karolinska, which is large and very strong. However, administratively there have been problems, also in Sweden. The first (and so far only) graduate student had to buy the air ticket for the first visit in Stockholm on her own, since the contract between the partner group in Sweden and Sida-SAREC was

signed very late. The laboratory equipment that should have been delivered directly from the partner group has also been severely delayed, and has not yet arrived.

In addition, the group has suffered from the slow financial management at UNAH in connection with the financial management test and individual group members have had to cover costs for attending a meeting in February on their own. However, reimbursements are expected.

7. University ICT Policy, Systems and Use

Support for 2005–2008, including library support, through the Sida-SAREC cooperation: SEK 19.1M

The ICT Master Plan: Ambitious goals. Upgrading of UNAH ICT hardware and software, as well as provision of training, in order to facilitate the use of the vast ICT opportunities, in administration, education, as well as research, is a major part of the cooperative agreement between UNAH and Sida-SAREC. Specifically, the aims are to:

- Improve the co-ordination capacity by providing modern ICT infrastructure and information systems to UNAH staff
- transform the educational system through e-learning, e.g. by supporting a paradigm shift from reproduction to design
- transform the library from a traditional library into an organisation consisting of information and knowledge navigation centres
- improve both the efficiency and effectiveness of library operations and services at UNAH through implementation of advanced ICT based solutions enabling the provision of advanced library information services
- promote the creation of local content and the production of content in digital form and on the Internet
- simplify and streamline administrative and managerial processes and management reporting facilities at both national level and the level of the university through the introduction of a computerised Management Information Systems
- promote office computing in the offices of institutions of higher education (presently some of the financial management is performed without computers)
- develop and implement a consistent set of training programs at different levels for different categories of ICT end-users among staff and students
- develop a data communication network spanning all physical locations of UNAH
- establish a dedicated, service oriented organisation through a new secretariat of ICT support being responsible for management, control and maintenance of ICT resources in common use at UNAH

These aims are described in an ICT Master Plan for 2006–10. The total budget for the activities and hardware included in the plan is about SEK 50M, of which the Sida-SAREC cooperation will cover less than half. However, the contribution from Sida-SAREC will, on its own, allow significant and sustainable improvements in the use of ICT at UNAH, not only on the main campus in Tegucigalpa, but also at some of the other UNAH campuses. Among these, San Pedro and Ceiba will be the main

bases, but also Choluteca, Danlí, Olancho, Comayagua, Olanchito, and Copán will be included. The success of the ICT plan is of major importance for the whole reform process.

The hardware provision in Tegucigalpa will consist of a 3 kms long underground fiber-optical ring connecting buildings on campus. Connections within individual buildings will be wireless. Substantial hardware investments will also have to be made within the individual buildings in order to support their local networks.

The fiber-optical ring is expected to start operating in November, 2007, but already in June, 2007, a radio based Internet connection to the Medical School (outside the main campus) was established. This connection covers a distance of almost 5 km, it secures much faster Internet services, and the satisfaction with this improvement is considerable.

Soon a similar connection to the Engineering Building (on campus) will follow, in order to reduce the problems the Engineering Faculty has suffered from with regard to ICT communication. Also Microbiology will see improvements of this kind in the very near future, even before the optical fiber connection has been completed.

In addition to the hardware provisions, a significant training effort is underway. This includes training both of ICT technicians and of users, for example in networking and multimedia education. Other important tasks are the work on the library information services mentioned above, improvement of the UNAH web-page, publication of an ICT bulletin, strengthening of the financial management information system (part of which is still operating without computers), creation of a curriculum management information system, etc.

The UNAH DEGT (Executive Directorate for Technology Management), earlier called CRA (Centro Recursos de Aprendizaje) performs these extensive and complicated tasks in cooperation with the organization SPIDER, located at the IT University in Kista, Sweden. The cooperation started in January, 2006. There seem to be considerable satisfaction with the way it is progressing.

Clearly the interest among UNAH staff, specifically of the Rector, for a better use of ICT opportunities is very high. The interest outside the main campus in Tegucigalpa is also very high, and UNAH staff members on other campuses have been included in the ICT training program. DEGT presently spends much time explaining eager UNAH staff why services and hardware cannot be delivered quite as early as they want. At least a vast majority of the TC members are also very supportive of the ITC project, and understand the importance of it. One indication is that the TC also invests (Government money) in ICT. For example, it recently purchased major equipment, including 7 expensive servers for major buildings. However, this was done without consulting SPIDER, and as a result, some of the purchases may not be ideal.

8. Conclusions

The reform plans. The reform plans for UNAH are visionary and include important goals far beyond the traditional ivory tower thinking. If reached, these goal will help reform, not only UNAH, but also many other parts of the Honduran society. It may become the start of a knowledge based development process in the country.

The National Congress has a continued commitment and interest in the reforms and may be UNAH's best ally. In particular, the "Follow-up Committee" of the Congress is trying to push the reform efforts. The media in Honduras could provide much better support, but, unfortunately, they often prefer to concentrate on negative aspects of UNAH.

The role of the Transition Commission. The TC has been a necessary construction and has helped get many useful reforms started. It has created a 9-point priority plan (Annex 3), which covers the main issues in connection with the reform (Annex 3). The TC has supported key reform activities, in some cases quite successfully. The fact that the TC has considerable funding available for supporting the reforms is an important advantage. The TC has handled several initiatives very well, including the start of the intensified research activities at UNAH, but it has, unfortunately, failed in its efforts to speed up the modernization of the traditional, excessive and inefficient UNAH administration through fast reforms. The TC has at times failed to act forcefully and without delay when problems occur, especially in connection with the unsatisfactory development within the financial management.

The TC has concentrated more on specific and practical reform issues than on strategic ones. It may be necessary to place greater emphasis on strategic alliances with the friends of the reforms, e.g. groups of research active teachers, and even students, at UNAH, before the mandate of the TC ends in May, 2008. The TC may also have to place more emphasis on the image in society and on campus of the reform activities.

The end of the TC mandate in 2008 will strongly increase the role of the Office of the UNAH Rector (the present Rector, who is a visionary person, fully in support of the reforms, will leave office at about the same time as the TC does). It is important that the TC, during its last year, try to prepare the ground for the continued reform efforts. The TC might, for example, try to shape UNAH rules and regulations, as well as the general spirit and political situation on campus, it may form new alliances with other supporters of reforms, etc. This should be done in order to ensure that the Office of the UNAH Rector is given the best possible conditions to act efficiently on both UNAH problems and opportunities to promote the reform efforts further.

Slow progress in within management reform. As indicated above, the reform progress is particularly slow within the UNAH management. UNAH has been assisted extensively by a highly competent foreign expert, especially within financial management. There has been progress in technical fields and administrative manuals are underway, but it seems like a renewal of the thinking among the UNAH management staff involved has not yet occurred. It may be a problem that it has not been possible to attract competence in these fields from outside UNAH. It may possibly be unrealistic to expect that old bureaucrats will be able to completely change their habits, especially if this change includes a reduction of their traditional power (see below).

The recent test of the financial management ability resulted in somewhat disappointing conclusions from many researchers as well as their Swedish partners, who all suffered during the exercise. Many had to show considerable patience, some had to pay bills on their own and wait for reimbursement, etc. In some cases laboratory work was stopped because of a lack of consumables, for which funding was actually available. This is a very serious situation for active researchers; it is a question if the severity for UNAH outputs of such incidents is fully appreciated by the relevant UNAH managers.

In connection with management attitudes, it may be a serious problem that the wanted changes in (financial) management, namely efficiency, accountability, and transparency, are likely to reduce the traditional power of the financial bureaucracy. This power relies to a great extent on the complicated rules and processes that usually are poorly understood by those that should be served by them, e.g. the researchers. The fact that there are more disincentives than incentives for management cooperation may be part of the reason for the problems.

A fast improvement of the UNAH management has been part of the cooperative agreement with Sida-SAREC. The failure to produce such an improvement must be considered a risk for the cooperation in general.

Education. It is difficult to determine accurately the progress within the educational programs, but it is encouraging that new curricula are being introduced, and that widespread use of e-learning and other technological advances within education is being prepared. Important aspects of the renewal of educational activities at UNAH will clearly benefit from a greater research activity among the educational staff; fortunately, such research expansion and upgrading are underway. In the future, individual UNAH staff members, who would like to upgrade their research competence and activities, will be able to apply for proper financial support (see below).

The pedagogical methods commonly used at UNAH have earlier been very traditional. In particular, they have been based on lectures and have often led to quite extensive memorization by the students. As part of the curriculum reforms, it is important that pedagogical renewal also takes place. For example, introduction of problem based learning (PBL), if possible in connection with work on real life problems in Honduras, might turn out to be very useful. Also undergraduate research is a very promising area; it may be considered if the curricula should allow the replacement of a course with a successfully performed undergraduate research project. The TC may support such renewal by providing modest funding to pedagogical experiments, as well as pedagogical courses and workshops.

Research progress. Some of the most convincing successes in the Sida-SAREC cooperation may be found in the research projects within Civil Engineering and Microbiology. The cooperation with Swedish partners is generally going well, the 8 students who have initiated their (mostly PhD) studies are all talented and may be expected to do well (this has been demonstrated by several of them already). If they excel, as expected, it is highly important that they are secured proper positions at UNAH after graduation.

A space problem in Microbiology is causing serious problems; it seems to be mostly a matter of formalities to solve it.

The selection of students for foreign graduate training has led to the identification of very talented young people, although the processes seem a little random. In the future a more well-defined selection process would be useful, especially if more qualified candidates become available (see below).

Research centers and research dissemination. The new research centers, covering fields in e.g. medicine, engineering, microbiology, communication, will receive (Government) funds for publication of research journals. This may provide a unique opportunity for finding national (even regional) solutions to research dissemination problems in the respective fields, as it was done in the Nordic countries more than 30 years ago (Thulstrup, 2002). Research dissemination is very important and must be supported by a proper infrastructure of national or regional journals, in addition to the major international journals. In order to be useful, such an infrastructure must have few, strong journals, rather than many weak ones, where research findings will be hidden. Each research field at UNAH, especially the research centers and Sida-SAREC projects must consider the present status of publishing in their field (both nationally and regionally), and must encourage a rationalization of the relevant journals, e.g. through mergers.

Largely unused opportunities: Undergraduate research. It seems that there are new opportunities for getting a much larger number of undergraduate students involved in research activities, especially within up-graded research projects. The benefits of this would be numerous, for example:

- Undergraduate students would often be able to contribute constructively to the success of research projects
- they would learn new skills, useful after graduation
- they would be given a chance to feel excitement about research work
- recruitment of the best, future graduate students, presently done somewhat at random, would become easier
- students who have been involved in research would help create a cadre of persons with both knowledge about and interest for research, first on campus, later in the wider society

Creating larger research communities might also become useful if the central UNAH research management continues to drag behind. It has been seen elsewhere, for example in Bolivia (Sida-SAREC, 2006) that competent, large and successful, research groups, together with their friends on campus, can place considerable pressure on the traditional university bureaucracy.

The ICT project. Another reform activity that is also progressing well is the highly important ICT upgrading, for which an ambitious and comprehensive plan has been produced. The work on this plan is so far on track. The cooperation with the Swedish ICT partner, SPIDER, seems to work well. Sida-SAREC funds will cover close to half of the total costs of the planned activities, but the TC has already provided substantial additional funds. It is still absolutely necessary to convince all UNAH leading managers and TC members of the potential role of ICT at UNAH. This covers a wide range of activities, including research, strengthening (as well as democratization) of education, transparency, administrative efficiency, etc. The success of the ICT plan is an essential element in the overall reform efforts, and a failure would be a significant defeat for the reforms. It is therefore important, for example, that the very recent establishment of a radio Internet connection for the Medical School has worked well.

One reason for concern: At the moment there is no campus-wide anti-virus service; this may lead to problems, since many users do not take care of this on their own. Extensive virus problems may have several negative effects, and may even reduce the appreciation of the new ICT services.

Team work and excitement about the mission of UNAH. It is a major problem at UNAH that the importance of the common good (i.e. UNAH accomplishments in education and research) is not clear to many, both among staff and students, who are often guided more by narrow individual than by social intelligence. In reality, a strong and successful UNAH will benefit all employees and students. Unfortunately, most staff members and students are not aware of this, but are primarily concerned about their own, special and quite narrow interests, or they follow blindly the opinions of labor union or student organization leaders, who do not understand the opportunities connected with the reforms. One very negative effect of this is the frequent strikes which slows down work within research and education and gives UNAH a bad image in the media.

The new research activities at UNAH, as well as the new emphasis on work on societal needs in Honduras offer new opportunities for creation of team spirit and excitement about university accomplishments. This new situation may be used to develop better internal cooperation and teamwork in connection with the reforms in general. Another, somewhat related problem is the frequent poor media coverage of UNAH, concentrating on useless strikes or other disagreements. An upgraded public relations effort by UNAH may help create a more constructive image of UNAH among the general

population and may also help make UNAH staff and students better aware of their important opportunities and tasks.

Staff evaluation. An evaluation of UNAH staff will be performed within the coming year. This will require outside expertise – clearly it cannot be performed by UNAH itself. The TC has tried to identify a domestic organization to take care of this task, but without luck. This is understandable, this task will probably have to be handled by a foreign, highly competent organization. It is important that the assignment (TOR) given emphasizes the constructive aspects of the evaluation: The purpose should be to help staff, by making it possible to take better advantage of their individual skills, by identifying their training needs, etc. The idea of a negative judgement of individual staff members' performance should be excluded from the start.

Conference on Higher Education. Another task to be performed during the next year is the organization of a major meeting at UNAH on higher education. SEK 1M has been reserved for this task through the Sida-SAREC cooperation. The meeting should be considered a useful opportunity for UNAH to get further inspiration and advice for the reform process. This may be possible by emphasizing the practical aspects of higher education, including cooperation with industry and society, rather than concentrating on purely academic subjects in the proposed agenda.

Risks. There are only very limited risks in connection with the individual research projects under the Sida-SAREC cooperation; they all seem competent and cooperate well with their Swedish partners. The graduate students are well chosen, although the procedures for this may be improved, and they will most likely do very well throughout their studies. Presently, it seems unlikely that those graduate students, who do not have positions at UNAH, will not be offered such positions when they graduate (or earlier).

The ICT projects is progressing well, sufficient funding is available, and the risks seem quite limited, although better (campus-wide) virus protection would be a big advantage.

The concerns in connection with the financial management, which is only reforming very slowly, are still substantial. Unless this situation is improved fast, the cooperation will have to rely for some time on less satisfactory financial procedures, especially by letting the Swedish partner continue take care of financial management for the research and ICT projects.

Finally, there is among many groups at UNAH a fear of changes and reforms, in spite of the fact that the present situation is not particularly good and that such reforms are likely to benefit almost everyone, for example by allowing them to become more productive. The risk of staff and student strikes is still substantial. It is therefore important that the benefits of the reforms are made clear to everyone and that groups in favor of reforms are mobilized and become more active.

9. Recommendations

9.1 UNAH and the TC

The future. During its last year, the TC must place higher emphasis on strategic issues. It may, for example, try to form alliances with both reform-friendly groups at UNAH and the media, partly in preparation for the continuation of the reform efforts after its retirement in 2008. It is also important to strengthen the position of the Office of the Rector and to progress with greater determination towards the improvement of the UNAH management. It must be secured that as many TC members as possible are able to spend the time required for a forceful effort during their last year, and the TC must identify strong allies to whom formal and informal key tasks can be delegated.

The importance of educational and research outputs at UNAH, as well as specific successes in these areas, must be emphasized more, so that not only the administrative staff takes note, but also the national media. In general, UNAH may have to strengthen its PR activities considerably.

A specific, fairly simple problem, that should be solved without delay is the inability (as quoted by the UNAH management) of UNAH to make purchases from abroad. A research active university in a small country cannot function without this option. Similarly, a solution of the space problem in Microbiology should be put in effect without delay.

UNAH should actively seek additional outside support for research activities, both from bilateral donors, development banks, and NGOs. There is a need for a much wider build-up of research at UNAH than what can be done through the Sida-SAREC cooperation. Furthermore, it is a healthy process to seek, and receive, funding from non-Government sources.

Research. The generally successful efforts within the identification, upgrading and expansion of specific research activities at UNAH should continue. The research manual may still need some refinement and the processes and outcomes in connection with the new Government financed research grants must be studied carefully. While there may be more than sufficient funds for such research grants in 2007, it may be necessary to expand the funding available in 2008, especially if applications from individual researchers outside the new centers are encouraged – a policy that is highly recommended.

It is important that evaluation of research proposals and performances are carried out well and that they are considered learning processes, with a thorough feedback to the applicants about how to improve their research. Such strategies has worked well elsewhere, e.g. in Indonesia (Koswara, 1996). In any case, courses and workshop on research methodology should be offered to staff and students (“how to write a proposal”, “how to write a research paper”, etc.).

Active research groups, especially those receiving funding from UNAH or the Sida-SAREC cooperation, including the new research centers, should increase the involvement of undergraduate students in their research, especially through small group research projects. These research projects may replace community service, but it should also be considered if course requirements might at times be reduced in order to be replaced by work on research projects.

The research projects should formalize the selection of students for graduate training, so that all interested students are given a chance to apply.

Annual self-assessments should continue for all research projects as well as other activities receiving substantial, targeted support. Courses and workshops on research and dissemination practices should be made available to inexperienced researchers.

The research centers with special funds for dissemination should not just aim for adding another publication to the existing ones in their field; this will not improve the situation. Rather, they should encourage cooperation (mergers) of all existing journals in their specific research area (both nationally and regionally).

Education. The push for reforms of the curricula should continue. A continuous effort should be made to integrate education with research and the real life needs of Honduras, e.g. through undergraduate projects.

UNAH should support pedagogical pilot projects, in order to gain further experience on new pedagogical opportunities, for example within PBL. The widespread emphasis on memorization should be abolished and replaced by an emphasis on concepts. Using open book examinations in all courses may help accomplish this. Courses or workshops on renewal of university pedagogy should be made available to all interested teachers, but some funding (and encouragement) should also be made available for pedagogical pilot projects (learning experiments).

Problems with newly enrolled students who lack basic knowledge in high school subjects should not be neglected. The problems should instead be analyzed and proper courses offered to them, according to their needs.

The ICT project and the library. The important work on the establishment of up-to-date ICT services at UNAH should be continued according to the plans, but with an improved coordination of investments from the TC and the Sida-SAREC cooperation. All information channels should be used to explain to impatient UNAH staff and students the rate of progress and the planned schedule for ICT expansions. The training activities, e.g. those related to the library, should have a better timing than before and, most of all should be practical and targeted.

The library should take on a new role as a window for UNAH research, e.g. by providing an up-to-date display of successful research outcomes.

A campus-wide anti-virus service should be provided as soon as possible, or ICT users should be advised individually on how they can avoid virus problems.

Management. The slow reform and low efficiency of the financial management is the main problem area in the cooperation with Sida-SAREC. It is important to change the bureaucratic thinking that has dominated this area for years. In order to accomplish this it may be necessary to bring in a few new, highly competent (Honduran) staff members with management experience from more dynamic organizations than the old UNAH.

Management groups receiving substantial support through the Sida-SAREC cooperation (or from the TC) should perform self-evaluations similar to those of the research projects and the ICT project. Management should also clarify why it did not take part in the recent self-evaluations in 2007. It should also explain why the reply to the latest KPMG report has not been submitted on time. The TC has an important role in these matters. It must act faster and more forcefully when reform efforts fail or are severely delayed. Specifically, it should demand for management to submit punctual quarterly progress reports, and immediate action should be taken if they are not satisfactory.

Greater emphasis must be placed on team building at UNAH, in such a way that the administrative staff members feel that they are part of the teams producing UNAH outputs. Especially the financial management staff must be willing to accept their (new) role as supporters of researchers and educators; they must take a more detailed interest in the individual needs and opportunities of the projects they support, instead of hiding behind complicated rules and Government regulations.

In Bolivia (Thulstrup, Munoz and Decoster, 2006) very positive results came out of a workshop in which both researchers from different projects and management staff worked together in small groups on proposals for solutions of key university problems. Such an exercise might also be useful at UNAH.

UNAH should also try to identify incentives for management to become more interested in efficient and transparent processes. At present, the management staff associates primarily disincentives with these changes, especially a loss of their traditional power.

A partial solution to the financial management problems, which might be considered by UNAH, is to create a special unit, using simple and transparent strategies, for management of funds under the Sida-SAREC cooperation. This strategy has been used with some success by San Simon University in Cochabamba, Bolivia (Thulstrup, Munoz and Decoster, 2006). The unit may be considered a pilot project, and should be used to gain experience on modern management methods. Clearly it is not an ideal solution and positive and negative effects must be considered carefully.

No matter how the financial management is organized, it will be useful to replace most of the traditional input evaluations (control) by the much more constructive output evaluations. The question “why does the researcher want this item?” and the usual resulting delay of procurement, should be replaced by fast procurement and later output questions to the research groups “did they use the purchased item in a productive way?” or “did the investment produce interesting and useful results?”

9.2 Sida-SAREC

Supporting the successful activities. Contrary to the administrative problems, e.g. within the financial management, the research management has proceeded well. The individual research projects in Microbiology and Engineering are progressing as planned, the students selected for graduate studies are excellent, and the support for these activities should continue as planned. Sida-SAREC may already consider potential additional projects that might be started after the 3-year pilot phase, based on the experience from earlier selection processes, including the selection performed in connection with the start of the Sida-SAREC cooperation.

Sida-SAREC may consider playing a role in the consolidation of research publication in Honduras/ Central America, a badly needed action.

Also the ICT project is progressing well and funding should continue as planned. During the coming 6–8 months the benefits of the ICT initiatives will become clear to many more UNAH staff and students; this may be expected to have a significant, positive effect.

Sida-SAREC may already now consider assisting UNAH within the organization of targeted training activities for inexperienced researchers, especially with regard to funding and dissemination. Courses or workshops on subjects like “how to plan research”, “how to write a successful proposal”, “how to write a good paper”, or “how to publish a paper” have been useful elsewhere.

Similarly, Sida-SAREC may also assist UNAH in connection with the educational reforms through pilot projects, courses or workshops; many UNAH teachers have never had a chance to become familiar with modern pedagogical methods, especially within Problem Based Learning (PBL).

Financial management problems at UNAH. It is clear that UNAH so far has not fulfilled the agreement with Sida-SAREC with regard to the modernization of the (financial) management, in spite of the substantial, targeted support that has been provided. Sida-SAREC should continue to put strong pressure on UNAH in order to solve the problems. If they are not solved soon, it may slow down both development of research at UNAH and other important activities.

It will be necessary to leave the financial management for the UNAH cooperation to the Swedish partners of the research and the ICT projects for yet another period. Within less than a year, a new, very carefully prepared, test should be performed, in the hope that UNAH and the TC have been able to solve the problems.

In view of the much more successful performance within other aspects of the cooperation, Sida-SAREC should do its utmost to avoid that the management problems result in a weakening of the more productive sides of the cooperation. However, Sida-SAREC should continue to put pressure on the UNAH management, for example by demanding frequent (quarterly) progress reports.

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Outside UNAH, Orlando Valladares from the Swedish Mission in Tegucigalpa was very helpful. Visits with Leo Villeda, FONAC, Edmundo Orellana, Member of the National Congress, and Victor Meza, Director of CEDOH, were both enjoyable and intellectually stimulating.

In Sweden, kind help was provided by Jan Albert from the HIV-program, Sven Hoffner from the TB-program, Lars-Christer Lundin from the Engineering program, and by Enrico Peletta from SPIDER.

Finally, Larry Ribbeklint, KPMG, and Claudia Lara-Perla kindly donated a lot of their time to explain matters that were important, but not necessarily easy to grasp. Their help is highly appreciated.

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Annex 1 Terms of Reference

2007-03-05 Assessment of UNAH University Reform

1. Background

Sida support to research cooperation with Honduras 2005 – 2008 was initiated with a preparation phase in 2001 in an effort to respond to the government's and civil society's proposal to transform the education in order to contribute to democratic social development.

The overall goal of the Swedish research cooperation with Honduras is to assist the country in its endeavour to reform the higher education (HE) and research sector to attain human development. In order to do so Sida entered into partnership with Universidad Nacional Autónoma de Honduras (UNAH) being the largest university with the mission to direct and research in the country. The aim of the program is to support an environment conducive for research and research training which depart from issues crucial to improve national development.

The UNAH showed considerable weaknesses in management, research and educational results. However, the political will to reform the university was manifested by a new law. Also, university staff aspirations for a better university are strong. Sida proposed to support UNAH during a 3 year period during which the reform was to take off. The aim of this support has been to establish some of the basic elements for reform and research at the UNAH. The proposed mechanisms to achieve this goal are: support to the reform process; support to individual research projects within faculty based research and research training programs; assistance to an ICT platform; and support for development of financial management and administration. A total of 3 950 000 MSEK was allocated to for the three, but due to lack of a reliable administrative and financial system funds have been managed by collaborators to UNAH. The agreement was signed to include a first period of two years (July 2005–June 2006) to be extended with one when it could be assessed that UNAH was prepared to handle funds.

The reform process has since its start suffered delays due to various reasons and the Transition Commission, the maximum university authority and leader during the process, has had to dedicate much time as mediators among groups less prone to accept the changes caused by the University Reform.

2. The Evaluation – General Objectives

The evaluation should depart from the development of the Reform Plan and its purpose. It should describe how it has been implemented in relation to stated objectives and implementation plans. It should assess the quality of the management and scheduled timeframe. It should describe the achievements and shortcomings of the reform process. It should assess what activities are left to be done and the timeframe for its implementation. What are the perspectives for the future? Evaluate the relative success of the reform and its implication for the HE in Honduras.

3. The IV Reform – Performance

The consultant should:

- Evaluate how the reform process has been managed? Has plans been carried out as intended? If not, what are the causes of the delays?
- Evaluate the manner in which the different working groups have participated in the process, and how the Transition Commission has supervised and followed up the work of the different working groups and their respective assignments.

- Evaluate the composition and performance of Transition Commission: as the leading body for planning, organizing and implementing the IV Reform.
- Other participants in the reform process: how have the consultants (ILAEDES, CEDOH) assisted Transition Commission in the reform process?
- How has the reform process been perceived by different actors at UNAH e.g. including research students, researchers and supervisor on the Sida/SAREC programme?
- How have the internal and external consultations with different groups and sectors have been carried out (i.e. at the university and in society).
- Assess how the politization at UNAH has influenced the reform process, governance and transparency.
- Assess positive and negative effects in the change of staff at UNAH.
- What aspects have guided the choice of university programs and curriculum development.

4.The IV Reform – Achievements

Departing from the Reform Plan the consultant should:

- Assess to what extent the Transition Commission at UNAH has achieved the general and specific objectives?
- Assess the achievements in the areas in relation to:
 - Institutional strengthening
 - Modernization of the administration (establish routines for management of external and internal funds – in consultation with KPMG)
 - Curriculum development
 - Strengthening of the research environment, research policies and research management.
 - The development and institutionalisation of a continuous form of *self-assessment* of progress and challenges in strengthening research capacity.
 - Improving the relationship between University – Society.
 - The development of a student policy
 - The development of Human Resource Development policy
 - Coping with increasing student enrolment
 - Database and election systems
 - Development and strengthening of the National system for Higher Education.
 - Ensuring funds for Higher Education both national and international.
 - Ascertaining that the transformation at UNAH is sustained through defined measures.
 - Implementation of modern technology and information systems in all academic, and administrative processes, including capacity programs at all levels of the university.
 - Implement a System of Evaluation and Accreditation to ascertain quality.
 - Development, updating and implementation of the legal framework of the Higher Education in general and UNAH in particular.

5. Method and Timetable

It is anticipated that the assignment should be carried out independently. The study should provide an analysis of the strengths and the weaknesses of the IV Reform process and the performance of its leading entity the Commission of Transition.

The consultants should for the purpose of the evaluation:

- take into account Sida/SAREC program-related documents such as PMs and “Guidelines for Applicant Institutions” which outlines the Sida/SAREC mode of support in order to measure requirements against capacity.
- take into account documents available at UNAH.
- interview key persons with knowledge and experience of processes relevant for the assessment of the Reform
- interview key persons that are affected or targeted by the changes that the reform causes.

The consultant will be briefed by Sida and shall thereafter prepare a working plan to be submitted to Sida for approval. The study which will be initiated in April 2007 and completed in May/June 2007. The consultant shall make his/her own arrangements for all travelling and visits related to the assignment.

6. Reporting

When the mission has been completed, the conclusions and, recommendations should be compiled in a report. First, the consultants shall prepare a draft report in English to be submitted electronically Sida for comments no later than 30th of May 2007. The draft report should be presented and commented upon at a seminar at Sida in Stockholm, and also at UNAH and the SDC in Tegucigalpa prior to the finalization of the report. A final report should thereafter, three weeks from that date, be submitted to Sida. (electronically and in two paper copies). The report shall be written in Word for Windows and should be presented in a way that enables publication without further editing.

7. The Consultants Should Have

- solid research experience and experience of HE reform processes
- experience in assessing the needs of research capacity building
- broad knowledge of research management and experience of organization analysis and organization development
- experience from international cooperation
- knowledge of universities in low income countries
- knowledge of Sida, its policies, strategies and methods for capacity building within research
- knowledge of Honduras and the Central American region
- fluency in English and preferably Spanish

8. Remuneration and Travel Costs

See accompanying Contract

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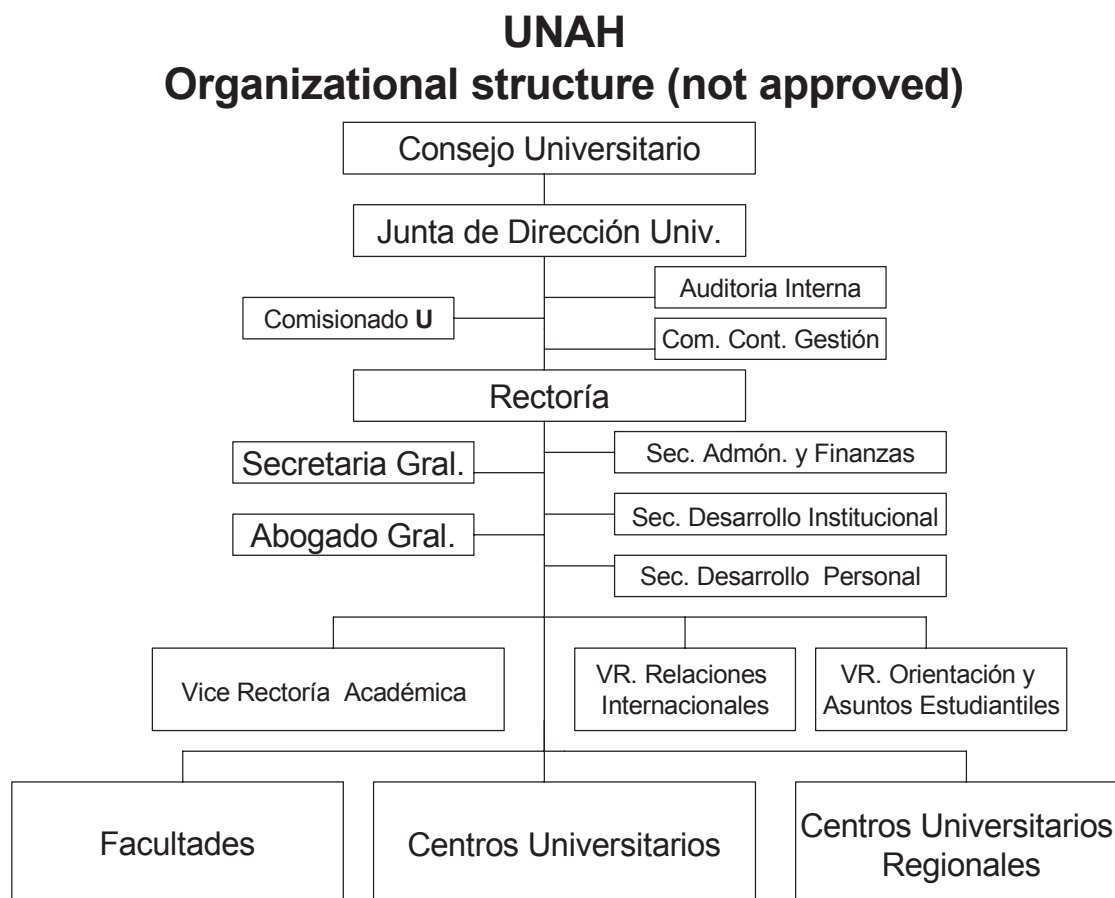
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Annex 2 Structural Diagram of UNAH



Annex 3 Priority Programs at UNAH

Translation: C. Santos

Program	Decisions	Execution/Leadership	Strategies
I. Essentials to the Reform: Ethics, transparency and Accountability	Design the matrix for institutional planning	CT: Dr. Haddad Abog. Alonzo RT: Dr. Santos	Strengthening of the different control units at UNAH.
	Induction meeting for directors and deans as a theme for the Permanent Seminar on University Reform training.	UA: Dra. Marín (CUEG) CCG: Dr. Arita EXT: FONAC CNA: Sr. Juan Ferrera	Incorporate the essentials (ethics, attitudes...) as a transversal axis for Curricular development, through different educational programs and forming teams at all academic units.
	Integration of Career schools and Regional Centers in the elaboration of Annual Operating Plans (AOP) based on Institutional Programs.		Public accountability in several ways (forums, internet pages, social media, etc.)
	Measurement and Evaluation of the different units accordingly to the commitments established on the AOP.		
II. Promotion and Investment on Research, Knowledge and solution Proposals for national Problems.	Progressive delegation of program execution to the Rector Team (RT) and academic units.		
	Development of a Research System for UNAH.	CT: Abog. Casco Dr. Euceda	Revision and adjustment of the System for Graduate Studies Strategic Plan.
		ER: Lic. Salomón UA: Dra. Martorell (CURLA) EXT: COHCIT	Development Plan for DICU system management.
			Plan for research, knowledge and solution proposal socialization.
III. Strengthening of Higher Education Management for Honduras.			Redesign research curricula for undergraduate and graduate programs.
			Strategic development plan for the institutes.
	Restructuring of the Higher Education Board.	CT: Dra. Martín ER: Dra. Calderón Dr. Obando (DES)	Coherence and commitment from the representatives of UNAH before the Higher Education Council.
	Adopt the initiative for the design and implementation of the National Plan for Higher Education Development.	UA: Abog. Navarro (Law Sciences) Lic. Delgado Fiallos (CURN)	Revision of the current norms and impulse new instruments and collaborative projects.
	Elaborate the policies for quality control in all types of Higher Education for the country.	EXT: Technical Consultative Council	Strengthen public universities in the National and Regional level.
			Promote the compliance to all norms and regulations of all Higher Education institutions.

Program	Decisions	Execution/Leadership	Strategies
IV. Integrate the National Educational System	Promote the Functions of the National Education Council.	CT: Dr. Haddad and Abog. Alonzo. ER: Dr. Santos (Rector)	UNAH's incidence in the passing of educational laws.
	Consensual revisions of the formulation and development of projects and programs that are to integrate the National Education System.	UA: Dr. Obando (DES) EXT: Education Ministry	Implement a technical unit in charge of Supporting programs that integrate us to the Secretary of Education.
			Propose the integration of a Research on Education Institute.
	Strengthen the participation of UNAH in the analysis and revisions of the National Education General Law.		
V. Pertinence and Quality of Education	Create councils for each academic subprogram.	CT: Dra. Norma Martín de Reyes and Dr. Haddad ER: Dra. Calderón, SUED Commission.	Create and participate inter and intra educational webs.
	Discuss and approve proposals for the different subprograms.	UA: Microbiology EXT: FONAC	Create and implement an evaluation mechanism for educational quality.
	Create specialized units responsible for academic subprogram development for the different academic units.		Create the Board for Quality Evaluation.
	Define and implement the directives for the Reform in career schools and university centers.		Develop the academic and administrative reform at regional centers, career schools and other careers.
			Execute the Project of Re-conceptualization and reorganization of the EAD at UNAH.
	Investment and support for the strengthening of the IPSD project.		
VI. Strengthening of the Link UNAH/Society	Integrate all academic units to the program UNAH/Society	CT: Dr. Haddad and Dr. Nuñez ER: Vinculation Directive Board, Academic Vice-rector and Academic Directive Board.	Make systematic the experiences of UNAH/Society.
	Create the Continuous Education Program.	UA: PLATS, Social Sciences Department. EXT: FONAC, AMHON and FECOPRUH	Create the different units (technical committees) in charge of developing the links at every level of university careers as Envisioned on UNAH's Organic Law.
	Approve a Labor Memoir and a Report for the Nation on March 1st related to the process of accountability and transparency.		
			Sign and execute agreements with different civil organizations.

Program	Decisions	Execution/Leadership	Strategies
	Continue to support the reform process, the development of regional centers based on social responsibility.		Improve the offer of technical careers in response to the needs for regional and municipal development.
VII. Development of the Technological Infrastructure	Copy the policy documents.	CT: Dr. Euceda y Dra. Martín ER: Ing. Hernández (CRA) UA: School of Engineering EXT: CONATEL, UIT,/ONU	Copy from Policies.
VIII. To rescue and promote A sense of National Identity, art, culture and Sports.	Strengthen and develop the Art Department	Ct: Abog. Casco and Dr. Haddad ER: Abog. Armando Valladares UA: Art Department EXT: Secretary for Arts, Culture and Sports, IHAH.	Create groups and spaces for debate. Permanent calling of people outside and inside of UNAH that are knowledgeable and interested in the fields of art, culture and sports.
IX. Academic, Administrative and Financial Management	Monitoring program for Project Investment and International Cooperation.	CT: Abog. Hernández Espinoza and Dr. Euceda	Socialization and implementation of regulations and administrative manuals.
	Demand that annual budget distribution is done accordingly to the operative plans.	CCG: Dr. Arita ER: Dra. Calderón and Abog. Quan UA: Enterprise Administration EXT: Vice-Minister Borjas	Updating of the Job Position Manual. Implement the evaluation of personnel at UNAH, considering as baseline the evaluation for the first semester of 2007.
	Hire Personnel Evaluation for UNAH.		
	Evaluate administrative management of SUED and SEP.		
	Hire external auditing for UNAH.		

Annex 4 People met in Honduras

Program for Erik W. Thulstrup, May 2–11, 2007

Wednesday, May 2

12:20 Arrival Toncontin airport, Staying at Hotel Portal del Angel (Hotel pick up at airport).

Thursday, May 3

10:30 Meeting with Victor Mesa, CEDOH (OValladares, Asdi, picking up at Hotel 10:15)

14:00 Meeting with Leticia Salomon, DICU, CEDOH (UNAH or CEDOH picking up at ?)

16:00 Meeting with Edmundo Orellana, National Congress (OValladares, Asdi, picking up at CEDOH 15:40)

Friday, May 4

08:30 Meeting with Leo Villeda, FONAC

11:00 Meeting with Dr. Ramón Romero, UNAH, 2 piso, Dir. Link University

Lunch time

02:00 Meeting Lic. Gloria Núñez Flores. Head of Library System at UNAH

Saturday, May 5

04:00 pm Meeting with Leo Villeda, FONAC and Dr. Rutilia Calderón. Hotel Portal del Angel.
(Meeting cancelled)

Sunday, May 6

Monday, May 7

09:00 am Meeting Dra. Norma Martín de Reyes. Commissioner, Transition Commission UNAH.
Meeting Place: CT UNAH

11:00 am Meeting Dr. Raúl Santos Maldonado. Rector. UNAH. Meeting Place: Rectory UNAH

Lunch time

02:00 pm Meeting Dr. Jorge Abraham Arita. President Managment Commission UNAH. Meeting
Place to be decided

Tuesday, May 8

09:00 am Meeting Dra. Lourdes de Madrid. Head of Microbiology Department. Meeting place:
CRA. First floor adm.building

10:00 am Meeting Dra. Lelany Pineda and student TB Project. Microbiology Department. Meeting
place: CRA. First floor adm.building

11:00 am Meeting with Transition Commission UNAH. Meeting place: CT Building

Lunch time

02:00 pm Meeting Dra. Ivette Rivera and student HIV Project. Microbiology Department. Meeting
place: CRA. First floor adm.building

03:00 pm Meeting Dra. Irma Gloria de Gallo. Malaria Project and student. Microbiology Department. Meeting place: CRA.

Wednesday, May 9

09:00 am Meeting with Dean Faculty of Engineering. Meeting place: CRA. First floor adm.building

10:00 am Meeting with Hydrology Project. Coordination and students. Meeting place: CRA. First floor adm.building

11:00 am Meeting Geotechnics. Project Coordinator and student. Meeting place: CRA. First floor adm. building

12:00 m Meeting Lab support. Meeting place: CRA. First floor adm.building

Lunch time

02:00 pm Visit to Central Library. University City

03:00 pm Other meetings

Thursday, May 10

09:00 am–12:00 pm Work at CRA and Unexpected meetings

Lunch time

02:00 pm Meeting Technological Platform (ICT Project-UNAH) Meeting place: CRA. First floor adm. building

Friday, May 11

10:00 am return to airport

Second Visit, Program for Erik W. Thulstrup, June16–21, 2007

Friday, June 16

10.15 am Arrival Toncontin airport AA 947, Staying at Hotel Marriot (Hotel pick up at airport)

Saturday–Sunday, June 16–17th

Work at Hotel

Monday, June 18th

11:00 am Planning meeting with Patricia Hernández Cañadas

Lunch time

03:00 pm Work at Hotel

Tuesday, June 19

09:00 am Working at Hotel

11:00 am Meeting with Transition Commission (CT) at UNAH headquarters

12:30 m Lunch with CT members

Wednesday, June 20

8:30 am Meeting with Dra. Leticia Salomón. Microbiology meeting room(CB Building)

09:00 am Meeting with all the UNAH research project (Microbiology and Engeneering) Microbiology meeting room(CB Building)

11:30 am Lunch time

02:30 pm Lecture “The new role of the library in research universities” Paraninfo UPNFM National Library Journeys (Honduran Library Association)

Thursday, June 21

10:00 am Hotel Marriot to the airport

01:25 pm Honduras to Denmark

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A Reproductive and Sexual Health Centred Approach
A collaborative programme between RFSU, Sweden and MAMTA, India**
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(ASSITEJ) Africa Network, 1999–2007**
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Grace Lubaale, Alfred Omenya
Department for Africa
- 07/08 Sida Support to the UNICEF Country Programme in Kenya**
Pauline Nyamweya, Atsango Chesoni, Nansozi Muwanga, Eric Ogwang,
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