

External Actions of the European Community
Grant Contract No SO/0038/IT-COF/05

**Establishment of a Somali Regional Technical Veterinary School
and Reference Centre (STVS) Phase II**

**Mid-term Evaluation
Final Report**

Consultant: Horst Jürgen Schwartz
Nairobi and Berlin, February - March 2007

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The views expressed in this report are those of the consultant and do not necessarily reflect those of the EC or Terra Nuova.

List of abbreviations

AHA	Animal Health Assistant
AU	African Union
CAHW	Community Animal Health Worker
CAPE	Community Animal health and Participatory Epidemiology Unit
CSP	Country Strategy Paper
DVO	District Veterinary Officer
EC	European Commission
ECSO	European Commission Somali Operations (Nairobi)
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FSAU	Food Security Assessment Unit
GTZ	German Agency for Technical Cooperation
IBAR	Inter African Bureau for Animal Resources
IGAD	Inter-government Authority on Development
JNA	Joint Needs Assessment
LICUS	Low Income Countries Under Stress
MLFR	Somali Ministry of Livestock, Forestry and Range
MoL	Ministry of Livestock
NAHA	Nomadic Animal Health Auxiliaries
NGO	Non Government Organisation
OIE	World Animal Health Organisation (Office International des Epizooties)
OVI	Objectively Verifiable Indicator
PACE	Pan-African Programme for Control of Epizootics
PARC	Pan African Rinderpest Vaccination Campaign
PULPA	Puntland United Livestock Professional Forum
ROS	The Republic of Somalia
SAHSP	Somali Animal Health Services Project
SLPF	Somali Livestock Professional Forum
STVS	Sheikh Technical Veterinary School
TN	Terra Nuova
ULPA	United Livestock Professional Association
UN	United Nations
UoH	University of Hargeisa
UoN	University of Nairobi
WB	World Bank

ESTABLISHMENT OF A SOMALI REGIONAL TECHNICAL VETERINARY
SCHOOL AND REFERENCE CENTRE (STVS) PHASE II

MID-TERM EVALUATION

CONSULTANT: Prof. Dr. Horst Jürgen Schwartz

Project Title: Establishment of a Somali Regional Technical Veterinary School and Reference Centre (STVS) Phase II

Grant Contract No: SO/0038/IT-COF/05

Starting date of contract: 1st July 2005

Ending date of contract: 31st December 2007

Recipient Organisation: Terra Nuova

Location: Sheikh, Somaliland

Total contracted amount: € 2,210,506

- **EC Contribution:** € 2,100,000
- **Other contributions:** € 110,526

MAIN REPORT

I. Executive Summary

- In 1990, agriculture contributed 65% of Gross Domestic Product (GDP) of Somalia including the livestock sector which accounted for between 40-50%. FSAU (2002) estimates that the livestock sector now provides 55 % of the caloric intake of the population as well as 60 % of their income. In light of its economic importance, the Somali livestock export sector requires efficient and effective veterinary support services in order to compete with other livestock exporting countries.
- Against this dynamic and competitive background, the available Somali veterinary support services are lacking and the general technical competence is dwindling. There have been no new graduates on any level of veterinary training since 1990.
- Priority activities for Somali veterinary services are as follows:
Control of epizootic diseases and certification of the health of livestock and livestock products for export,
Protection of public health through control of zoonotic infections,
Alleviation of husbandry related diseases and disorders affecting productivity of livestock.
- Against this background Sheikh Technical Veterinary School (STVS) was designed with the overall objective to ensure that Somali people have access to efficient and effective veterinary services in order to safeguard pub-

lic health, improve livestock production and animal welfare, and sustain livestock export. The project purpose is to establish a regional technical veterinary training and reference centre educating sufficient numbers of young professionals and responding to demands from the Somali livestock industry.

- Phase 1 of STVS started in December 2001 and was due for completion in July 2003. Progress was slow due to delays in approval of the site allocation for the school in Sheikh, the need to run a pre-entry foundation course for the students and uncertainty about the scale of building works. Phase 1 was extended twice up to May 2004 followed by bridging phases until the present phase 2 was approved and a grant contract signed, starting in July 2005.
- The overall objective for the STVS project has been defined as: Veterinary services in the Somali region safeguard public health, protect animal welfare, improve livestock production and sustain livestock export.
- The specific objective (purpose) of STVS has been defined as: A regional veterinary training system supplies competent technicians and provides professional advice to major stakeholders involved in the Somali livestock industry.
- For Phase 2 of the project the following expected results were formulated:
 - 1) STVS conducts a fully recognised veterinary diploma course on a regular basis;
 - 2) STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre;
 - 3) Institutional framework of the school and administrative set-up is fully developed.
- Phase 2 of the project started under the grant contract no SO/0038/IT-COF/05 on 1st July 2005. The duration of the contract is 30 months, ending 31st December 2007. The recipient organisation is Terra Nuova. The total contracted amount is € 2,210,506, of which € 2,100,000 is contributed by EC with Italian co-funding.
- At the very start the project experienced a rapid turnover of managers, tutors in the Sheikh school, and a change of project co-ordinators in the Terra Nuova Regional Office in Nairobi. This situation has stabilised now and management and staff development are very promising. In the meanwhile the project has produced three extensive interim technical reports which had used the project's logframe as a guideline to evaluate achievements.
- Several indicators used in the original logframe for Phase 2 are unrealistic. This applies to the project purpose as well as to the results level.
- Assumptions and risks are formulated in a soft and non-committal fashion. Project ownership has not been defined, consequently long-term institutional and donor commitment is lacking. This is a severe drawback for the process of accreditation and for the general sustainability of the project. Again this will be discussed in more detail under Section E.

- All activities listed for result 1 (STVS conducts a veterinary diploma course on a regular basis) were successfully implemented and achievement of result 1 was rated highly satisfactory. STVS is conducting coursework now in the third year and has consistently developed and improved all aspects of teaching, training and administrating academic work. There was some initial delay in the rehabilitation of the school buildings due to the fact that the second international NGO, originally in charge of this pulled out of the project. In the meanwhile the work has started and will be finished before the end of Phase 2.
- Achievements under result 2 (STRVS is recognised as a technical reference centre) were rather mixed but none was highly satisfactory. This is basically to blame on overoptimistic planning from the very start of the project. The rather ambitious result was obviously expected to be achieved without a separate budget, without personnel assigned and without carefully planned infrastructure and facilities. If the reference centre is still considered a vital part of STVS this has to be amended for an anticipated next project phase. At least some of the needed physical facilities will become available once the final premises will be finished.
- Result 3 is both the most important and the most difficult since it is strongly linked to all questions of the sustainability of STVS. Although substantial legal advice was provided through an expert employed by Terra Nuova no progress was made in finding a legal framework for STVS against the difficult political situation in Somalia. Long-term ownership and responsibility for STVS has not been established. Efforts in that direction undertaken by Terra Nuova need to be acknowledged but no other stakeholder made any productive contribution to a solution of the problem. Closely linked to and depending on the legal status are all other aspects of sustainability like accreditation, business plans, funding issues, and management structures.
- The project management of STVS at the time of the MTE was solid and effective and able to respond to all matters arising from the day-to-day running of the classes in Sheikh as well as all other academic activities. The building activities are making good progress and will be finished before the end of Phase 2. Links with the local livestock sector and related projects have been formed and are yielding benefits to STVS. There is regular involvement of the steering committee and thorough internal monitoring and evaluation is carried out. There are a number of smaller changes in the finance plan but they are cost neutral with reference to the overall budget. Budget changes are mainly in relation to staff changes with a certain shift towards expatriate (regional) staff.
- Like with all projects in tertiary education impact and effectiveness will become noticeable only after a longer time. The best indicator will always be the first graduate returning to the institution as a teacher. In the case of STVS I would estimate that a proper impact evaluation will become possible earliest after another five to six years of continued operation and external support.
- STVS has almost achieved technical sustainability. The bulk of the investments will be implemented by the end of phase 2. The school's demonstra-

tion farm, the teaching clinic, and a service laboratory as part of the reference centre could be installed easily and cost-effectively early in a potential Phase 3. Once this has been done investment needs will go down to maintenance level.

- Financial sustainability, business plans, and funding requirements will depend on establishing ownership and a legal framework for STVS. Terra Nuova and the STVS management and staff have prepared the way for a much needed and sustainable contribution to economic security in the Somali Ecosystem. In the process more than 4 million Euros were spent. It is high time for some of the institutional stakeholders to show political commitment.

Specific recommendations for the remainder of phase 2

The following recommendations arise directly from the project log frame and are aiming to consolidate the progress made to date during the first part of Phase 2 and prepare continuation into a next phase which is needed to safeguard what has been achieved so far.

- Finish building activities, move to final premises.
- Further consolidate curriculum and assessment procedures (data base).
- Recruit additional tutors.
- Establish tracing procedure for graduates.
- Develop objectives, requirements and budget for reference centre, develop STVS website.
- Develop objectives, requirements, physical plans and budget for demonstration farm and animal clinic.
- Decide legal status issue, implement procedures to assure legal status as soon as possible, give particular emphasis to regional aspect.
- Develop business plan for STVS.
- Follow-up accreditation issue, initiate formal accreditation procedure with at least one of the regional institutions.

Recommendations for a possible phase 3 of the STVS project

- Ascertain legal status of STVS
- Ascertain accreditation of STVS
- Set up all necessary management bodies
- Grand review of the curriculum, i.e. duration, focus, additional specialisations, short courses, training units for project personnel
- Establish and run reference centre
- Establish and run demonstration farm and clinic
- Increase student intake to 30 per class

- Establish tracing procedure for outgoing students, establish alumni association
- Establish cooperation with other projects
- Develop strategy to reduce dependence on external funding and/or find new sources for funding

Overall Recommendation

STVS has made great progress during the past two years. It shows the promise of becoming a focal institution for veterinary training in the Somali ecosystem. Its sustainability is presently threatened by its undefined legal status more than by any other factor. This needs to be solved by a concerted effort of all stakeholders. STVS will need external financial support for a long time to come. The consultant knows of no institution in the tertiary education sector which is truly self supporting in the long term. Funding requirements will decline over time as investments into infrastructures will phase out and income will be generated through students' fees and paid services to the public. A long-term projection needs to be commissioned on this and a long-term commitment by donors should follow that.

II MAIN REPORT

SECTION A: PROJECT DESIGN

Introduction and Background

Somalia (ROS) occupies much of the eastern part of the Horn of Africa, comprising 638,000 km² of arid and semi-arid rangelands. Much of Somalia and adjacent lands inhabited by Somalis (the Somali ecosystem) lie on the East African plateau at an altitude of 1000-2000m. There are extensive foothills to the north sloping down to the coastal plain. The area is classified by FAO (2004) as 55% rangelands, 14% forest, 12% cultivatable and 19% other. In 1990, there were an estimated 45 million ha of pasture and 8.2 million ha of crops, of which 15% were irrigated.

Although small areas of high ground in the northwest and more extensive areas in the south have rainfall in excess of 500 mm, the average is 100-200 mm with 40-60 rain-days per year. Rainfall decreases progressively from west to east. It is bimodal, with the main (Gu) rains in April-June, and secondary (Dair) rains in October-November. The Gu may fail every 10 years or so, the Dair perhaps every 3 years.

The northwest regions comprise a mixture of pastoralists and agro-pastoralists. The northeast regions are predominantly pastoral as are the adjacent regions in the south. The only genuine agricultural regions lie in the south between the Shabelle and Juba rivers, and here pastoralists are few. In the northwest regions livestock are the main source of food and income. Camels and small ruminants are the most important species. The population is heavily dependent on the livestock export trade, the income from which pays for commodities such as rice, pasta, tea. The north east and central regions are the driest and the population is even more dependent on livestock than the north-western regions. Since browse is more consistent than grazing, camels and goats thrive better than sheep and there are few cattle. Migration is more extended and the lower density of wells has led in the past to seasonal clashes between clans.

In the southernmost regions, which are also the more humid parts of the country, pastoralists are less numerous but they are still important in the economy. The largest concentrations of cattle are found here and locally produced cereals are traded for milk. Livestock are traded to East African countries and the Arabian Peninsula.

The human population is estimated to be 9.7 million (ILRI 2003)¹. Close to half a million Somalis are internally displaced and an increasing number are refugees in neighbouring countries. Other estimates² put the population at only 6.8 million with an annual growth rate of 2.94 %. FAO (2004) estimates that 80 % of the population in Somalia are rural. According to ILRI (2003) approximately 7.4 million are pastoralists and 1.8 million are mixed farmers and/or agro-pastoralists. In 1990, agriculture contributed 65% of Gross Domestic Product (GDP) including the livestock sector which accounted for between 40-50%. FSAU (2002) estimate

¹ Thornton, P.K. et al (2003): Mapping poverty and Livestock in the Developing World. International Livestock Research Institute (ILRI), Nairobi

² UNDP/World Bank Socio-economic Survey, 2002; Source: www.somalia-jna.org

that the livestock sector provides 55 % of the caloric intake of the population as well as 60 % of their income³.

In light of its economic importance, the Somali livestock export sector requires efficient and effective veterinary support services in order to compete with other livestock exporting countries; to become less vulnerable to external factors; and to function within the current climate of progressive regulation of the transboundary livestock trade through international codes.

Against this dynamic and competitive background, the available Somali veterinary support services are lacking and the general technical competence is dwindling. The deteriorating quality of services can be attributed to a number of factors including:

- absence of veterinary training institutions at university and technical levels since 1991
- lack of a new technical cadre to replace the existing ageing veterinary professionals
- isolation of Somali veterinary professionals from technical debate and fora
- absence of a critical number of competent veterinary professionals in the sector
- limited awareness among Somali political leadership of the importance of efficient veterinary services to sustain and protect the livestock export sector
- limited awareness among Somali livestock traders of the importance of investing in the veterinary sector in order to receive efficient and effective veterinary support services.

Priority activities for Somali veterinary services are as follows:

- Control of epizootic diseases and certification of the health of livestock and livestock products for export,
- Protection of public health through control of zoonotic infections,
- Alleviation of husbandry related diseases and disorders affecting productivity of livestock.

The first two activities being “for the public good” require government inputs at least at the administrative and supervisory level. Government or private sector can provide the inputs at field level. The third input is “for the private good” and is best provided by the private sector.

CAHWs will be indispensable for all inputs at field level, but especially for disease surveillance. They will be the main providers of clinical services with supervision from para-professionals and veterinarians. A market survey would indicate more precisely how many are needed but it could be in the region of 6000. There is a need to train several thousand CAHWs but many of the resources for this could come from within Somalia, with donor support.

³ All quoted data in this paragraph are estimates from various sources and have to be taken with caution. The consultant is not in a position to judge the quality of the quoted data.

The minimum number of para-professionals for regulatory activities (animal health inspectors, meat inspectors) would be around 125 covering districts, ports and abattoirs (export and domestic). Figures of 900-1200 would be appropriate for all inputs. There is an urgent need to train 100 to 200 para-professionals in the next 8 years, and possibly increased numbers thereafter.

Veterinarians are required at least for the administrative and supervisory inputs mentioned above. The minimum number needed would be around 65, based in headquarters, regional offices, ports and export abattoirs. Around 300-400 would be needed if all types of input are considered. The need for new veterinarians is less pressing and there is no justification for setting up a university level school in the immediate future. This situation needs to be reviewed periodically⁴.

The Current Situation of Veterinary Services in Somalia

Despite the long absence of a functional government in the larger parts of Somalia, at the level of the internal markets, trade routes and ports, some semblance of regulatory activity has continued to the present day. Animals undergo a (sometimes cursory) clinical inspection at the big markets such as Toog Wajaale (animals coming from Ethiopia's Somali region) and Burao (the biggest livestock market in the country). In addition to clinical inspection, at the request of importing countries, small ruminants are blood-tested for brucellosis at holding grounds pre-export. Certificates are usually accepted by the importing countries, although on occasions, boat-loads of animals are rejected on health grounds, sometimes without reasons given.

In Somaliland, a Ministry of Livestock was established in 1993. In recognition of a global trend in liberalisation of markets and privatisation of public services, it commissioned a "Guidelines on Private Veterinary Services in Somaliland (1996)". This is a good attempt to define the functions which could be transferred to the private sector and how they would be regulated, especially with regard to certifying the health of livestock in the export trade. It also defined in some detail the qualifications and responsibilities of different cadres, including veterinarians, animal health diplomats, auxiliaries and pharmacists. In 2002 MoL issued a National Veterinary Code which includes many of the recommendations of the Office International des Epizooties (OIE) concerning disease notification, certification of exports, privatisation and delivery of veterinary services.

In 2004 the government veterinary services in Somaliland comprised 22 veterinarians and 36 intermediate level AHAs (MLFR – personal communication). They are based in the regional capitals and at the ports, carrying out the essential regulatory and administrative duties, concerning the movement of animals, testing and certification for the export trade. A similar number of personnel are working for veterinary associations, doing clinical examinations and blood testing for the export trade. A few are working for NGOs, carrying out disease surveillance, vaccinations, extension and training. Many have received training in the topics mentioned above, also in drug use and marketing and management of small businesses.

⁴ The numbers above are quoted from: Penney, Edelsten and Schwartz (2004): Draft final report Framework Contract AMS/451 - EU support to Sheikh Technical Veterinary Training School (Somalia) – Study for a Project Financial and Economic Analysis (Including Risk Analysis and Probability Appraisal)

In addition there are an estimated 295 CAHWs in Somaliland, who have been trained and equipped to provide basic services in their home areas. This includes treatment for the common ailments ("first aid"), prophylaxis for internal and external parasites and infections, disease surveillance and extension. Some CAHWs are working under the supervision of veterinary associations (more in spirit than a genuine mutually supportive capacity), others are independent. There is little quantitative data on the impact they are having on the health and economics of the livestock population, however they are highly valued as a source of epidemiological information and potential for early warning of epizootic diseases. Drugs are widely available in the market place but there is no control over importation, sale, quality and use.

In Puntland services were strengthened by an EC-UNA project (1998-2001) and the countrywide EC funded Itinerant Training Project (ITP), including:

- training of animal health professionals for private practice related to livestock export and general veterinary services,
- establishment of a livestock export certification system,
- establish a port veterinary office,
- assist the development of a veterinary practitioners association (PULPA),
- establish a laboratory to oversee brucellosis testing.

In 2003, the Puntland Ministry of Livestock enacted a Veterinary Law Code similar to the one referred to for Somaliland above.

The Somali Livestock Professional Forum (SLPF), the United Livestock Professional Association (ULPA) and Puntland United Livestock Professional Association (PULPA) are examples of local interest groups through which trained personnel are attempting to engage with donor organisations. SLPF claims to have representatives throughout Somalia but this is disputed by ULPA. ULPA operates in the northwest representing 8 veterinary associations and 63 people. PULPA covers the northeast, and according to Gilles (2001) represents 70 people including NAHAs who work in 17 teams doing clinical work and brucellosis testing; an additional 18 veterinarians and veterinary assistants work at the port veterinary office and abattoirs at Galkaio and Bossasso.

Data for the other regions of Somalia were not available. However the chairman of ULPA said there could be as many as 400-500 para-professionals in the whole of Somalia, whereas SAHSP is estimating only 380.

Genesis of STVS

Against this background Sheikh Technical Veterinary School (STVS) was designed with the overall objective to ensure that Somali people have access to efficient and effective veterinary services in order to safeguard public health, improve livestock production and animal welfare, and sustain livestock export. The project purpose is to establish a regional technical veterinary training and reference centre educating sufficient numbers of young professionals and responding to demands from the Somali livestock industry.

This is achieved by establishing STVS which offers a recognised 3 year veterinary diploma course, targeted at supporting the livestock export industry. The school adopts an interactive and practical methodology, with emphasis on field work to complement theoretical inputs. It is open to secondary school leavers. On completion of the first 2 years of pre-clinical common studies, students pursue an elective year in livestock product inspection or animal health. A reference centre for the Somali livestock industry will also be established, with Somali veterinary professionals filling the positions of academic tutors and providing technical advice to local administrators, policy makers and individuals involved in the livestock sector. The whole intervention builds skills and technical knowledge necessary to overcome the constraints affecting the country's veterinary services, improve the performance of the livestock export sector, and enhance the economic welfare of the country as a whole.

The project has been designed largely by Terra Nuova together with another international NGO (UNA) and the early assistance of the Veterinary Faculty, University of Bologna, in an advisory capacity. Terra Nuova has long experience in various facets of the Somali livestock sector, particularly in veterinary work.

The establishment of a veterinary technical school aimed specifically at providing veterinary technicians to the public sector to facilitate certification of live animals as well as livestock products for export. Export of live animals, carcasses, and hides and skins provides the largest to agricultural GDP in the Somali ecosystem and to GDP of Somalia in general. The acute shortage of sufficiently trained manpower due to the breakdown of all related training in 1991 as well as the lack of any legitimate public authority has led to frequent bans on livestock and related trade by importing countries. Provision of a fresh technical cadre would remove at least some of the constraints leading to this situation.

The STVS project is in line with the needs of the livestock sector and the strategies of the major donors, and will contribute to the goals of the current administrations and other supporting projects.

Phase 1 of STVS started in December 2001 and was due for completion in July 2003. Progress was slow due to delays in approval of the siting of the school in Sheikh, the need to run a pre-entry foundation course for the students and uncertainty about the scale of building works. Phase I was extended twice up to May 2004 followed by bridging phases until the present phase 2 was approved and a grant contract signed, starting in July 2005.

Phase 1 outputs can be summarised as follows:

- 5 Somali tutors trained in curriculum design, training methodology and subject matter,
- blueprint of course structures, methodology, content for the whole course completed
- training materials for year 1 prepared on a lesson by lesson base,
- regulatory framework and assessment materials have made good progress,
- 27 students completed a foundation course at University of Hargeisa and are ready for enrolment at STVS.

Many other activities were carried out laying the foundation for the management structure of STVS, external support and international recognition. The Sheikh site was finally approved; however, neither rehabilitation nor other work on site had started.

At the end of Phase 1 the project had achieved only some components of the expected results. Efficiency was high for the outputs listed above, the tutors were well trained and highly motivated, the course materials well prepared. The only major inefficiency was the failure to agree at the start of the project on what was required for rehabilitating the Sheikh intermediate school as premises for STVS and the omission of a demonstration farm.

Project Objectives and Design

The overall objective for the STVS project has been defined as:

Veterinary services in the Somali region safeguard public health, protect animal welfare, improve livestock production and sustain livestock export.

The specific objective (purpose) of STVS has been defined as:

A regional veterinary training system supplies competent technicians and provides professional advice to major stakeholders involved in the Somali livestock industry.

From the above it is obvious that STVS should contribute to the reestablishment of the public veterinary service system by providing young qualified personnel with particular emphasis on safeguarding export of live animals, carcasses, and hides and skins through recognised health certification of the respective commodities.

For Phase 2 of the project the following expected results were formulated:

- 4) STVS conducts a fully recognised veterinary diploma course on a regular basis;
- 5) STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre;
- 6) Institutional framework of the school and administrative set-up is fully developed.

Project design and expected results are adequate in view of the dismal situation of the public veterinary services in the Somali region (Somali ecosystem). The applied strategy is well in line with the current needs of the livestock sector and aims at long-term improvements of the situation. Looking at some recently produced assessments and development perspectives like the CSP⁵ and the Joint Needs Assessment⁶ tertiary education and professional training in the livestock sector also figure prominently in the views expressed by the donor community.

⁵ Country Strategy Paper 2007 – 2013: A Response to the Reconstruction and Development Framework; Draft 1 of 7th December 2006; The European Union Member States Denmark, Finland, Italy, Sweden, United Kingdom, The European Commission and Norway

⁶ Source: www.somali-jna.org

The Logical framework

The logical framework is quite ambitious as some of the indicators go. Although it has been used to monitor project achievements in the interim technical reports, which in itself is commendable, it has not been revised or modified to date. In particular the workload for the six tutors has been set at a very high level and has been fragmented into so many tasks that this may be detrimental to the core task, the development and running of the curriculum.

Indicators

Overall and specific objectives:

The indicator of increased household income and increase in livestock export figures is highly unlikely to arise from the successful implementation of STVS. Such development has multiple factors affecting it the majority of which are far outside the influence of STVS activities. Furthermore it would have needed the establishment of sound base values at the onset of the project and continued monitoring over at least two decades, which is far beyond the expected time horizon of the project and consequently of little use. These indicators should be dropped from the logframe.

To have 50 % of STVS graduates integrated into jobs in the livestock sector six months after graduation is a reasonable indicator which can be ascertained easily provided a suitable follow-up procedure is established in time. The other indicators in the project purpose section all relate to staff activities not focussed on the projects core activity of teaching. Seminars, consultancies and public information service can at present and with the present numbers of staff in STVS only be occasional side outputs but not achievement benchmarks. The respective indicators should be dropped from the logframe and replaced by some more realistic ones (see Section E "Revised Logframe" and Annex 5).

Results 1:

The indicators are reasonable and applicable. Barring the last one they are realistic and, as the present situation shows, they can be achieved. The issue of accreditation, however, has been underestimated. Initiation of a formal accreditation procedure may be achieved within a 30-months project period; but it is very unlikely to complete this process in such a short period in view of the complexity of the process, the multiple requirements and quality parameters needed to be met by STVS before the procedure can be started. Another factor is the – sometimes deliberate – slow pace of the procedure within the accrediting institutions.

Results 2:

The indicators are reasonable. That they have not been achieved is due to the ambitious formulation of result 2 which was not pursued to the extent needed. Extenuating circumstances are discussed under activities.

Results 3:

The indicators are again reasonable; however, in the present uncertain political constellations in the Somali ecosystem the time frames set are much too ambitiously. Hence they should be adapted to a level achievable during the projects lifetime (see under activities and Section E "Revised Logframe).

Assumptions and Risks

STVS is aiming to establish a tertiary education institution. As such it needs continued external financial support for 10 to 15 years if not longer. One of the assumptions should have been long-term donor commitment, although this might have turned into a killer assumption.

Overall the assumptions and risks are well defined and valid in the situation; however, the formulation "continuous proactive role of the international community..." is soft and non-committal.

One assumption which is lacking entirely is relating to ownership. Usually this is one of the most important considerations before starting a programme such as STVS. Allowing for the restriction that STVS was conceived as a regional and autonomous institution catering for the public sector in a situation with no recognised government one of the assumptions should have been that a regional international institution or a consortium of institutions claims ownership or commits to comparative long-term support. Another assumption is likewise lacking which is the capacity of the public sector in the Somali ecosystem to absorb the graduates of STVS (see Section E "Revised Logframe).

Project Start-Up

Phase 2 of the project started under the grant contract no SO/0038/IT-COF/05 on 1st July 2005. The duration of the contract is 30 months, ending 31st December 2007. The recipient organisation is Terra Nuova. The total contracted amount is € 2,210,506, of which € 2,100,000 is contributed by EC with Italian co-funding.

At the very start the project experienced a rapid turnover of managers, tutors in the Sheikh school, and a change of project co-ordinators in the Terra Nuova Regional Office in Nairobi. This situation has stabilised now and management and staff development are very promising. In the meanwhile the project has produced three extensive interim technical reports which had used the project's logframe as guideline to evaluate achievements.

Methods used in the in Evaluation

The STVS project Phase 2 is currently at its mid-way stage, which is an opportune moment to evaluate progress in terms of outputs achieved by the project vis-à-vis its targets, achievement of projected results as per the approved log frame and related OVIs, and preliminary assessment of the action's relevance, efficiency, effectiveness to date, achievements and linkages. Furthermore, the review will advise on areas of success and future focus.

The objective of the mid-term evaluation (MTE) of STVS is to assess the progress in the implementation of the project with particular emphasis on

- the relevance of the project,

- efficiency of implementation and effectiveness today,
- expected impact and sustainability to date, and
- recommendations for the remainder of Phase II of the project.

The schedule included, prior to travelling in January 2007, a preparatory study of project documents made available by Terra Nuova, i.e. Project proposal, project document, interim technical reports, and curriculum descriptions, as well as of background literature drawn from various internet sources (Annex 7).

From 29.01. to 02.02.2007 informal talks and discussions were held in Nairobi with representatives of Terra Nuova, SAHSP, Royal Danish Embassy, AU-IBAR, EU-Delegation Somalia Operations, University of Nairobi, and German Academic Exchange Service (Annex 6). More project documents (minutes of steering committee meetings) were accessed and a visit to Somaliland was prepared.

From 03.02. to 10.02.2007 a visit to Somaliland was conducted. Informal talks, discussions and interviews were held with representatives of Ministry of Livestock, Ministry of Education, Somaliland Chamber of Commerce, regional administrations (Sahil Region, Western Region) and several regional veterinary officers (Annex 6). Interviews and discussions with all STVS staff (management, tutors) and students were conducted at Sheikh. Participation by the consultant in classes, i.e. lectures, field demonstration, laboratory and computer pool were used to assess the implementation of the curriculum. Visits to all STVS interim facilities, the proposed building site for the permanent facilities, and the relocated and finished intermediate school buildings were carried out. The final building plans as prepared for the tendering process were studied in detail together with the TN civil works expert.

After return to Nairobi on 10th February further informal talks to representatives of FAO Somalia, Terra Nuova, Italian Embassy and University of Nairobi followed. The TN legal consultant gave an introduction to the legal background of STVS. Informal debriefing took place at EU Somalia Operations and formal debriefing to STVS stakeholders at AU-IBAR. An aide-mémoire was handed over to Terra Nuova on 20th February 2007.

Critical Summary of Section A

Section A "Project Design" gives rise to a number of critical points and questions. The most important are:

- Figures, numbers and statistics on Somalia, with the possible exception of remote sensing data, are estimates of varying reliability. To base planning on such figures or to use them to argue decision constitutes a risk to all and any project. This refers amongst others to the capacity of the public and private sectors to absorb graduates of STVS.
- Several indicators used in the original logframe for Phase 2 are unrealistic. This applies to the project purpose as well as to the results level. It will be discussed in detail below under Section E.
- Assumptions and risks are formulated in a soft and non-committal fashion. Project ownership has not been defined, consequently long-term institutional and donor commitment is lacking. This is a severe drawback for the

process of accreditation and for the general sustainability of the project. Again this will be discussed in more detail under Section E.

SECTION B: KEY FINDINGS

Overall Assessment

Table 1: Summary Evaluation of the Project's Achievements by Result and Activities

Results Activities	1	2	3
1	+++	++	---
2	+++	+/-	---
3	+++	+/-	++
4	+++	---	+++
5	+++		

+++ highly satisfactory; ++ satisfactory;
+/- less than satisfactory; --- highly unsatisfactory.

Table 1 shows the overall achievements of the project by result and activity. It is noticeable that result 1 was achieved to a highly satisfactory extent whereas results 2 and 3 show only mixed results. This is regrettable but was unavoidable because many of the activities listed under results 2 and 3 were either overtaxing the available manpower or dependant on external factors not or at least not entirely under the control of the project personnel.

Some of the negative outcome can be allocated to unforeseeable circumstances like the rapid turnover of project management in the initial period which adversely affected public relations and lobbying activities. However, some of it is due to overoptimistic planning with regard to the work capacity of the school's team (tutors, headmaster, and project manager). This relates specifically to the development and running of the reference centre, the library and in-service training and other extramural activities.

The steering committee is also to blame. Not only should its members have recognised the need and importance of the institutional framework for accreditation but it should also have addressed these issues more actively. Especially the institutional framework, or rather the lack of one, is largely a political issue and should have been addressed on that level, i.e. government officials, AU-IBAR, ECSO and the Embassies involved. Accreditation could have received more attention by the project management and by Terra Nuova but was treated with lower priority probably due to staff changes and staff constraints. Some more detail is elaborated below under activities.

Summary of key findings by Results

Result 1: STVS conducts a recognised veterinary diploma course on a regular basis

Activities

1.1 Set up and run interim training activities in Sheikh

The achievements within this activity have been highly satisfactory. To date STVS is running the complete programme for all three years with classes numbering between 12 and 16 students. The initial curriculum development has been completed, with the exception of the year-three specialisation "Livestock Product Inspector". Work on this is under way now and will be finished by the end of Phase II. Despite the congestion in the rented premises of the school all parts of the programme are taught. There are practical classes in the field, instruction in the laboratory, normal class work, and both guided and individual computer work by the students. Learning agreements with five regional veterinary offices were developed and successfully applied for student attachments during the second and third year.

There are still not enough tutors available to allow a comfortable set-up of time tables. The tutors are overloaded with teaching commitments and have little time for other activities like reading, course preparation, field attachment supervision, and paper marking. However, the tutors are committed and the atmosphere in the team is relaxed and co-operative. Bringing in expatriate tutors from the region, when no Somali tutors could be recruited can be seen as a step to assure the regional character of STVS. Teaching all courses in English turns out to have been a wise decision as Somali speaking personnel with the right qualifications could not be recruited after those who had come in from the diaspora left STVS.

1.2 Rehabilitate and refurbish STVS training facilities, and move training activities to final destination.

There was a long delay in the start of the rehabilitation work due to various external factors and management problems. At present this task is tackled with great determination. The STVS compound has been fenced and the intermediate school which had occupied some buildings on the STVS site has been relocated into buildings put up by STVS just opposite the compound. After receiving additional funding from the Danish Embassy STVS planned and constructed nine classrooms, teachers' offices and sanitary facilities. The work was supervised by the STVS civil works expert and was finished to very high quality standards within only three months. The work on the permanent premises of STVS was tendered, contracts were allocated and work will start early in March this year. Judging by the speed with which the new intermediate school was put up it is highly probable that the premises will be ready by August/September so that the new academic year of STVS can be started in the permanent premises.

The new intermediate school will be handed over officially by the President of Somaliland during first week of March, who will also lay the foundation stone for the STVS buildings at the same occasion.

- 1.3 Further refine existing curriculum and develop additional components in line with overall learning objectives
- 1.4 Implement and refine students and curricula assessment system and regulatory system

Activities 1.3 and 1.4 are very much interrelated and are therefore evaluated together. Since the start of the first class there has been continuous work on the curriculum and all the assessment procedures. The courses take a problem oriented learning approach and are prepared and documented lesson by lesson. Continuous assessments and examinations are likewise monitored and accumulated for later reference and repeated use. Simultaneously all student performances are monitored and recorded not only as performance records but also to check on teaching quality and possible needs for changing learning objectives. The system is very comprehensive but also very complex, thus requiring a high input of time by the responsible junior educationalist. Optimisation of the data base is required and will be done as soon as a qualified consultant can be recruited. As with activity 1.1 it can be stated that the achievements in 1.3 and 1.4 are highly satisfactory.

Course contents, focus and language are appropriate in the Somali context as far as the stated learning and qualification objectives for the STVS graduates go. In addition to export certification and meat inspection there is a far wider scope where graduates of the envisaged calibre would be urgently needed in the Somali livestock sector, such as nutrition and feeding, reproduction and breeding and general upgrading of the production systems for higher productivity and improved resource utilisation efficiency. Once STVS is firmly established in a sustainable institutional framework efforts should be made to expand the curriculum into that direction by offering more options.

- 1.5 Raise visibility of STVS and actively promote the School's reputation and objectives at local and regional level

Visibility and positive perception of STVS by the local public has been gradually increasing over the last two years. The factors leading to this positive development were arising from the increasing visible activities of STVS. In particular these were:

- Starting classes in rented space in Sheikh
- Starting physical development of site, i.e. fencing of school plot, relocation of intermediate school
- Field work of students with local livestock owners
- Limited but increasing services to local livestock owners
- Field attachments of student to regional veterinary officers

All this will have greater impact when the new school buildings can be occupied and class intake can be raised to 30 students per year. Additional impact will come from the proposed establishment of the STVS clinic and the demonstration farm.

Regional visibility is not as far advanced as would be desirable but several activities were undertaken to amend this. At the international level a MoU with the University of Bologna, Faculty of Veterinary Medicine, has been drafted and is ready for signature. At the regional level contacts were initiated and MoUs are negotiated with University of Nairobi, Faculty of Veterinary Science, and Makerere University

Kampala, Faculty of Veterinary Medicine. A MoU has been signed already with the Kenya Meat Training Institute. At the local level a MoU had been signed with University of Hargeisa (UoH) to run the foundation course for STVS. Unfortunately this had to be suspended since the performance of UoH was not satisfactory. MoUs have also been signed with University of Burao and Amoud University Boroma. With the latter two STVS will most likely be on the giving rather than on the receiving side for benefits. Presently some tutors of STVS are offering courses at the embryonic veterinary faculty of University of Burao. This is certainly promoting cooperation at the local level but also aggravates the staff constraints which STVS itself is still experiencing.

Once a sustainable institutional framework has been found for STVS a closer liaison with national (local) institutions of higher education than currently envisaged should be sought. At present and even more so by the end of Phase 2 STVS will be far more advanced in terms of curriculum, facilities, international contacts, and teaching staff than all local Somali "Universities". In the very long term a college or faculty of livestock sciences and agriculture associated to or merged with one of the local universities is conceivable. This could satisfy regional needs just as well as an autonomous, independent and regional STVS standing on its own.

Such development is beyond the time horizons of common technical aid projects, which are between two and three years. GTZ and DAAD (German Academic Exchange Service) have been instrumental in the creation or rehabilitation of Departments and Faculties in University of Nairobi and Makerere University Kampala. Their commitment for support ranged from 12 to 15 years with investment phases for the first five to six years and long term low level support for another six to nine years. A similar time perspective should be taken for STVS.

Objectively verifiable indicators for result 1

The OVIs for result 1 are applicable but for the last one and have been fulfilled almost completely:

- The STVS theoretical and practical curriculum document is completed, implemented and continuously amended.
- Letters of agreement and co-operation with at least three academic institutions⁷ have been exchanged or negotiations are nearing completion. Expressed purpose of these agreements is the eventual international accreditation of STVS assuming that a sustainable institutional status will be found for STVS. There has been already some initial exchange of tutors/lecturers with University of Nairobi.
- The annual drop-out of students is well below 10 %.
- Visiting by tutors of 5 different locations for publicising the new entry examination will be done for the next intake.
- Publicising the past intakes was kept low key because of the limited facilities at the temporary school premises. This will be stepped up for the next intake in November 2007 to achieve the enrolment of 30 students.

⁷ University of Bologna, Faculty of Veterinary Medicine; University of Nairobi, College of Agriculture and Veterinary Sciences; Makerere University Kampala, Faculty of Veterinary Medicine

- Official and international recognition is the only aspect of result 1 which has not been achieved. This issue will be discussed under result 3.

Achievement of result 1 can be rated as highly satisfactory

Result 2: STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre

Activities

- 2.1 Establish partnership agreements and related technology and knowledge transfer systems with recognised regional and international centres

The achievements under 2.1 have already been outlined under activity 1.5. Although the OVI regarding this activity will most likely be met by the end of Phase II agreements on an equal standing level can only be expected after the accreditation process has been concluded successfully. This will be dealt with under result 3.

- 2.2 Establish and maintain communication network (academic and technical) with local stakeholders and beneficiaries.

- 2.3 Identify areas of interest and participate at / organise technical conferences and seminars

- 2.4 Set up and operate a comprehensive information and documentation centre

Activities 2.2 through 2.4 are strongly interrelated and components of the proposed technical reference centre. The reference centre forms a prominent part of the project proposal and features in its title. The way its functions are described it would be without doubt a great asset both to the project and the beneficiaries. However, the achievements to date are very limited. One of the major constraints is dependence on physical facilities which can only be offered in the permanent premises, i.e. a reference library, a seminar room, a PC-pool with internet connection, and a functioning website and e-mail address. These problems will be solved very soon.

Solving some other problems will require additional planning efforts. The objective, activities, and tasks for the reference centre are not clearly spelt out. There are no separate budget lines in the project proposal, no personnel have been allocated, and the role of the tutors and the school management in the operation of the centre is not defined. Maybe there was the quiet assumption that the centre would be a no-cost by-product of running STVS. There was also a statement in the last Steering Committee Meeting minutes that AU-IBAR would provide a senior officer, based in Nairobi, to take care of this issue. Again no clear definition of tasks was given and no action was taken.

Insofar achievements regarding result 2 were only partially satisfactory and conscious effort will have to be made to rectify the situation. (see also recommendations)

Objectively verifiable indicators for result 2

The OVIs for result 2 are only partially applicable or achievable. Numerical evidence for customer satisfaction is very difficult to acquire and needs special monitoring, whereas numerical evidence through number of requests made and re-

sponded to is easier to realise. In-service training organised is too vague to be of use, unless specified by target group or content. Only one of the OVIs relating to signed partnerships is realistic in the context. Here full achievement is expected by end of Phase II. (see also activity 1.5)

Result 3: Institutional framework of the school and administrative set-up is fully developed

Achieving result 3 is currently the important issue but also the most difficult one. Here STVS cannot act alone but needs support beyond finance from the donor agencies, regional institutions like AU-IBAR as well as from others like the partner universities.

Activities

3.1 Identify and establish the legal framework of STVS, with specific reference to its regional mandate

In an attempt to establish a legal framework for the operation of STVS a legal consultant was employed by Terra Nuova. A first draft of the consultants report was delivered in May 2004, the final report November 2004, and a follow-up report December 2004. These documents were made available to the Steering Committee as soon as they were received. A verbal presentation was made during a meeting as early on as 2004. Furthermore the legal consultant prepared a number of sample documents during spring and summer 2006 and a possible time frame and milestones for the legalisation procedure. Again these were discussed by the steering committee on more than one occasion but no discernible action was taken. A concerted effort of all stakeholders in STVS is required to rectify this, since continuation of the status quo will severely hamper progress in establishing a long-term business plan, in developing a sustainable management structure, and in achieving accreditation. All of these require STVS to be a recognised legal entity subject to specific regulations and liabilities.

There appears to be distinct reluctance and/or ability from most of the stakeholders to accept ownership of STVS because of the extremely delicate political implications. That this was not clearly spelt out is the most crucial deficiency in the original project proposal as well as the Phase-2-proposal. Not being a political expert on the "Horn-of-Africa-Affairs" the consultant is not in a position to suggest how to amend that. The most obvious choice to the outsider would be giving ownership to the host, i.e. the Somaliland Government. Since this is heavily opposed by almost all other stakeholders one should follow the suggestion made by the legal consultant of Terra Nuova, who proposed the establishment of a private legal entity under Kenyan law running an educational institution in Sheikh. This would allow all present and some future stakeholders to place representatives into a "Board of Governors" without compromising themselves politically. Among the present stakeholders AU-IBAR would be best placed to take the leading role in the process. Terra Nuova needs to divert some manpower for lobbying tasks or alternatively employ extra personnel (a consultant) for this work.

3.2 Develop and establish business plan and secure medium term funding requirements.

As long as there is no clarification of the legal status and official affiliation of STVS it is hardly possible to suggest a business plan and secure medium term funding. Sustainable funding needs to be secured and administrated by the "owner" of STVS no matter whether these are students fees, payments for extramural services, government allocations or all forms of external grants and loans. Presently this role is played by Terra Nuova. It is conceivable to continue like this for an anticipated Phase 3 of the project. However, this would not be a sustainable solution. Business plans will also depend on the management structures envisaged once the transfer to the permanent premises has taken place. Some tasks have been outsourced at present, i.e. catering and administration and day-to-day running of student accommodations. Operating library and reference centre as well as the schools farm and clinic will require budgeting.

3:3 Develop and establish sustainable management structure for STVS

STVS has developed a solid local management structure with manager, accountant, liaison officer, and education officer which is sufficient under the present conditions but will need considerable boosting once the transition is made from a project to a recognised institution. This will become an issue during a possible Phase 3 of the project and will depend on the type and format of the legal framework adopted for STVS.

The immediately pending move to the final premises will at least require new solutions for catering and the management of the planned cafeteria and student accommodations, also a janitor's position to look after the school grounds and facilities. Additional responsibilities will develop from the establishment of library, reference centre and eventually from the establishment of farm and clinic. Whether these can be run by the present personnel as additional work load appears doubtful.

3.4 Support to STVS through Steering Committee

The Steering Committee was established very early during the project and held its first meeting in January 2003. Since then it has met regularly, but with some variation in attendance. All important issues, and some less important ones, were raised and discussed often leading to definitive action. In this respect the support through the SC was satisfactory. As mentioned above there was one big issue (ownership and legal status) which was discussed at various Steering Committee meetings. Decisions were consistently postponed. The project management did not get the necessary support here.

Achievements of result 3 are difficult to evaluate. Some aspects were approached very well, like the legal consultancy, without achieving any action. Other aspects could not even be approached as long as the legal issue was not solved, like the business plan and the accreditation. Overall the result is less than satisfactory, mainly because the complexity of the situation had not been realised at the inception of the project. In this respect a major proportion of the responsibility of this situation lies with those agencies involved in the project proposal and its initial acceptance and not so much with the present project staff.

Objectively verifiable indicators for result 3

None of the OVIs listed for this result have been achieved. They were much too optimistic to start with if not highly improbable. A principal revision has to be carried out during the remainder of Phase II (see recommendation).

Critical Summary of Section B

Section B is dealing with the results as described in the projects logframe. The evaluation is done by activity within result.

- All activities listed for result 1 (STVS conducts a veterinary diploma course on a regular basis) were successfully implemented and achievement of result 1 was rated highly satisfactory. STVS is conducting coursework now in the third year and has consistently developed and improved all aspects of teaching, training and administrating academic work. There was some initial delay in the rehabilitation of the school buildings due to the fact that the second international NGO, originally in charge of this pulled out of the project. In the meanwhile the work has started and will be finished before the end of Phase 2.
- Achievements under result 2 (STRVS is recognised as a technical reference centre) were rather mixed but none was highly satisfactory. This is basically to blame on overoptimistic planning from the very start of the project. The rather ambitious result was obviously expected to be achieved without a separate budget, without personnel assigned and without carefully planned infrastructure and facilities. If the reference centre is still considered a vital part of STVS this has to be amended for an anticipated next project phase. At least some of the needed physical facilities will become available once the final premises will be finished.
- Result 3 is both the most important and the most difficult since it is strongly linked to all questions of the sustainability of STVS. Although substantial legal advice was provided through an expert employed by Terra Nuova no progress was made in finding a legal framework for STVS against the difficult political situation in Somalia. Long-term ownership and responsibility for STVS has not been established. Efforts in that direction undertaken by Terra Nuova need to be acknowledged but no other stakeholder made any productive contribution to a solution of the problem. Closely linked to and depending on the legal status are all other aspects of sustainability like accreditation, business plans, funding issues, and management structures.

SECTION C: PROJECT MANAGEMENT

Project Management Structure

All project staff is recruited and employed through Terra Nuova. All project staff is either based in Sheikh or spends the major proportion of their time there. In comparison to the original job descriptions and staff positions numerous changes have been made during the first 18 months Phase II. Some became necessary because two of the original Somali tutors, who had been hired from the Diaspora, resigned on short notice. The need for other changes arose from the day-to-day running of

the courses, shifting of responsibilities and additional tasks coming up while STVS was building up to the present complement of students and classes. The following Table 2 gives the changes as well as summary explanations of the rationale behind them.

Table 2: Job description and staff position changes

Somali staff	
School Principal	The position of Principal has been cancelled. The foreseen Principal's tasks are currently efficiently covered by the Project Manager. The position will only be necessary after project termination.
4 Tutors	2 Somali Tutor positions (biochemist and economist) were vacant after resignation and efforts to replace them with other Somali staff failed. Two expatriate tutors' positions have been created and filled by one Kenyan and one Ugandan
School manager	The position of School Manager has been cancelled and converted to Internal Affairs Officer
Secretary/Librarian	This position is still vacant
Secretary/Accountant	This position has been filled
Liaison Officer	Liaison officer is a senior qualified veterinarian who is well connected with local administration and the livestock sector in general.
School support staff	The number of local staff increased from original plans, as the project is currently operating on 4 sites in Sheikh (temporary premises).
Driver/Logistician	New positions of drivers/logisticians needed as project purchased a car and is intending to purchase bus for field training sessions
Information technology technician	New position intended to improve the skill of students in Information technology's tools
Internal affairs officer	New position needed for coordination of students' food, accommodations, logistics for training and interaction with Sheikh communities
Laboratory technician	New position needed for better laboratory teaching and management, this position has been filled
Expatriate Staff	
Project manager	A veterinarian with a strong managerial background and experience in pastoral production systems in developing countries to ensure efficient

	implementation of all project activities
Institutional Development and Partnerships Adviser	The position of Institutional development and Partnership Advisor has been dismantled as most of tasks on the position could be better handled if dispatched between Senior Educationalist, Project Manager, and Legal Expert.
Senior Educationalist	The position of Senior Educationalist is responsible for the overall set up of the curriculum and its methodology, as well as for most of accreditation and recognition tasks. After dismantlement of Institutional Development and Partnership Advisor, the Senior Educationalist will carry additional tasks on partnership.
Civil works expert	Responsible for all construction work carried out at Sheikh
Junior Educationalist	New position for the day-to-day supervision and assessment of courses taught and of students' performances.
Agro-Economics Tutor	Position of expatriate Agro-Economist tutor created as resignation of Somali tutor left the project without this key position in teachings. Efforts to recruit another Somali Agro-Economist failed.
Veterinary Biochemistry Tutor	Position of expatriate Biochemist tutor created as resignation of Somali tutor left the project without this key position in teachings. Efforts to recruit another Somali Veterinary Biochemist failed.
English Tutor	Position of expatriate English tutor created as level of students showed to be poor in English. Efforts to recruit a Somali English Tutor failed.
Legal Expert	The position of Legal Expert is created as in the past it was carried out by consultancy, but most of proposed legal set up failed to be followed up and none of the current personnel is qualified for this kind of task.
Communication Expert	The new position of Communication Expert is created. Previously it was foreseen to be covered through consultancy but it seems better to have a full time position for 10 months for set up and personnel training
Consultancies	Fill in for vacant tutors' positions
Support staff part time (administration, accountant, secretary, driver)	

The rationale behind all changes is well founded and the changes have contributed to improved quality of teaching, improved monitoring and assessment of the school's curriculum and, in particular, to fast progress in the implementation of the taught programme. So far these changes were cost neutral on the total project budget level. Nevertheless, it needs to be mentioned here that the teaching programme is still understaffed. Teaching three classes full time, with two parallel streams in year three will require at least two, better four additional tutors, to allow adequate time for activities such as reading, lesson preparation, marking of papers, etc.

All established posts appear appropriate in the current situation. In particular employment of expatriate tutors from neighbouring East African countries was necessary after Somali tutors recruited from the diaspora dropped out. No replacements could be found within Somalia. The appointment of the Project Manager cum Headmaster proved to be a very good move since the present positive status of STVS development is largely due to having very active and strong person almost full time in Sheikh.

Not many changes would be crucial at this stage, since the day-to-day running of the school is more or less secured. With pending changes of the legal status also management structures will need adaptation but this can not be speculated on at this point in time. What is urgently needed is a person who intensively and full-time follows up the legal status issue. It should be a person with legal expertise but also with communication skills. He or she would best be based at Terra Nuova but should have easy access to all other stakeholders.

A number of draw backs were experienced in other activities in the field, i.e. the construction and rehabilitation work of the permanent school buildings and the establishment of the reference centre. The post of civil works expert became necessary when UNA (international NGO), which was originally responsible for the construction work, pulled out of the programme. The reasons for this remained unclear to the consultant. The work is now well under way. The status of the reference centre has already been mentioned above.

Project Expenditure Pattern

The project expenditure pattern is according to the approved budget with some cost neutral shifts between the various staff positions. In all other budget lines changes are minimal. Since the contracts for building and rehabilitation works have only just been awarded there has been no movement yet in the real estate and works budget.

The term of reference for this consultancy did not cover an expenditure analysis so no in depth examination was done. From conversations with the project management it became apparent that most expenditure was incurred with regard to Activity 1 and that the spending was justified, in line with the amended budget, and well within the original budget. The project has also benefited from additional budget allocations by the Danish Embassy for the fencing of the school compound and the construction work needed for the relocation of Sheikh Intermediate School.

Project Coordination

The Steering Committee was established early on during the project and held its first meeting in January 2003. The committee comprises of STVS and TN staff,

representatives of AU-IBAR (the current Director of AU-IBAR is the committee's chairman), donor representatives (EC, Italian Embassy, Danish Embassy), the Somaliland Ministers of Livestock, of Education, and of Planning and Finance, as well as local and regional authorities from Sheikh and Sahil Region. There has been varying attendance by staff from other projects, i.e. FAO-LICUS, SAHSP, by some co-operating universities (Nairobi, Hargeisa, Bologna), and professional associations and private stakeholders (livestock traders, private veterinarians) from the Somali ecosystem.

The committee has met regularly twice per year, alternating venues between Nairobi, Hargeisa and Sheikh. There was some variation in attendance since travelling between Kenya and Somaliland is not always easy, i.e. due to visa problems for Somali passport holders. All important issues, and some less important ones, were raised and discussed often leading to definitive action. The minutes of the meetings are extensive and quite informative. It has been suggested to me by some contact persons that inclusion of representatives from the Transitional Federal Government could be beneficial concerning issues like legal recognition of STVS and formal accreditation of the school.

Since the previous TN regional representative (A. Zanotta), who had a strong involvement in STVS through his responsibility as Institutional Development and Partnership Advisor, left Terra Nuova some deterioration in communication between the project and some of the stakeholders was reported to me. Steering committee meeting minutes and interim technical reports were duly distributed but direct and verbal contacts were disrupted. This was probably due to the reshuffling of responsibilities in the project team and the cancellation of the post of Institutional Development and Partnership Advisor without an appropriate reallocation of tasks. The fact that the project manager was spending most of his time on site in Sheikh, where he was urgently needed, may have further contributed to an unreasonable workload for the remaining personnel in Nairobi. Some change and some better and more definite allocation of tasks in this respect are needed in future.

Project Linkages

STVS has developed links with several organisations and institutions internationally and in the region. First and foremost is the long relation to University of Bologna which was of crucial importance in the early development of the curriculum and the initial training of the Somali tutors. This support continues and will be formalised with a MoU in the immediate future. Another MoU was signed with the Kenya Meat Training Institute mainly to access expertise for the forthcoming third year specialisation "Livestock Product Inspector" in the STVS curriculum.

MoUs are currently being negotiated with the Veterinary Faculties of University of Nairobi and Makerere University Kampala with the specific objective to formally initiate accreditation of the STVS courses with at least one of the two institutions. With the same objective an additional contact with University of Addis Ababa, Faculty of Veterinary Medicine in Debre Zeit is planned.

MoUs have been signed also with two private Somaliland Universities in Burao and Boroma. The benefit out of those will probably go to the two institutions rather than to STVS since their curricula, facilities and coursework are still in a rather embryonic state. The existing co-operation with University of Hargeisa was discontinued due to unsatisfactory performance of UoH.

A MoU had been signed with the FAO-LICUS project, but is expired now with the end of this project. Contacts to FAO Somalia are still active; a new collaboration may be coming up. Most tangible results are expected from cooperation with SAHSP. A container laboratory for diagnostic services will be placed at the STVS site in Sheikh and will be made available for student training and demonstration purposes. A source at FAO Somalia mentioned that something similar could be achieved in cooperation with a proposed FAO project on improving slaughterhouses and meat inspection in a number of sites in Somalia. The STVS management needs to explore systematically if and where such avenues for further cooperation might be exploited.

Monitoring and Evaluation

STVS produced during Phase 2 three interim technical reports, which use the project logframe as reference. The reports are very comprehensive and detailed. In particular the second report (January to June 2006) is, with a total of 30 annexes also very bulky. Together with the minutes of the steering committee meetings these reports give a very good picture of the project's progress.

In addition to this "conventional" reporting STVS is also running a continuous assessment scheme of students and tutors performances, almost giving a lesson by lesson evaluation in correspondence with a lesson by lesson preparation of the courses. I have never seen such an elaborate and detailed system before. It is a full time job for the Junior Educationalist at Sheikh. The data bank used for this exercise appears to be rather cumbersome and slow to handle and should be optimised by an expert. However, there is substantial benefit in the exercise since the curriculum and teaching practice has seen numerous modification and improvements over time.

Critical Summary of Section C

The project management of STVS at the time of the MTE was solid and effective and able to respond to all matters arising from the day-to-running of the classes in Sheikh as well as all other academic activities. The building activities are making good progress and will be finished before the end of Phase 2. Links with the local livestock sector and related projects have been formed and are yielding benefits to STVS. There is regular involvement of the steering committee and thorough internal monitoring and evaluation is carried out. There are a number of smaller changes in the finance plan but they are cost neutral with reference to the overall budget. Budget changes are mainly in relation to staff changes with a certain shift towards expatriate staff due to the unavailability of qualified Somali staff. Preference is given to personnel from the Eastern African region.

SECTION D: PROJECT IMPACT AND EFFECTIVENESS

The project impact is not easy to judge at this early stage since no graduates have left the school yet. Visibility and acceptance are gradually improving (see under activity 1.5). Both the opening of the permanent STVS premises and the release of the first batch of graduates will inevitably have a big impact. They will be the first graduates in the field after more than 15 years. The crucial point will be whether the rather limited public sector in Somaliland and the even more limited public sector in Somalia and the Somali ecosystem are prepared to absorb the graduates. I

could not find any solid evidence for that except for the Somaliland Minister of Livestock remarking that the graduates will be highly welcome.

Positive statements on the quality and dedication of STVS students came from two of the Regional Veterinary Officers who had had students on field attachment for two occasions. A herd owner who was repeatedly visited by a student group for field classes reported several cases of correct diagnosis and successful treatment of Trypanosomosis in his camel herd. He stated that he had not seen any veterinary assistance in his herd in many years.

Like with all projects in tertiary education impact and effectiveness will become noticeable only after a longer time. The best indicator will always be the first graduate returning to the institution as a teacher. In the case of STVS I would estimate that a proper impact evaluation will become possible earliest after another five to six years of continued operation and external support.

Technically STVS could be sustainable reasonably soon. The bulk of the investments will be implemented by the end of phase 2. The school's demonstration farm, the teaching clinic, a service laboratory as part of the reference centre still need to be discussed in terms of scope and programme which will reflect on funds needed. Once these have been established investment needs will go down to maintenance level.

Financial sustainability is a different matter. Although financial needs for investments will go down to maintenance in time other expenses, particularly staff costs will go up from present levels until such time when all staff can be locally recruited and paid local salaries. Presently and probably for another decade to come STVS will have to rely to a large extent on expatriate tutors and maybe also on expatriate administrative staff, like headmaster/school manager, communications expert, educationalist, and librarian. In terms of costs expatriate personnel will be comparable to Somali personnel recruited from the Diaspora.

The consultant is not a financial expert and the TORs do not require a Phase 3 budget. Furthermore there is no definite Phase 3 planning which would allow doing any budgeting. The issue of financial sustainability can therefore be only treated in very general terms. Potential sources of funds for STVS are:

1. Student fees (tuition, boarding and lodging)
2. Payments for extramural services (clinic, reference centre, extension, field days)
3. Government allocations
4. Livestock sector
5. External grants (scholarships, equipment, short-term tutors)
6. External donors
7. Eventual owner of STVS, trust fund

Student fees and payments for extramural services will cover only a small part of the expected running costs. Government allocations, which are the most common sources of fund for higher education institutes, can not be expected (which government: Somalia? TFG? Somaliland?) unless ownership has been established.

Payments from the livestock sector in form of levies or taxes specifically for STVS are highly unlikely. Who would collect them?

External grants are common in the higher education sector worldwide. They are given from different organisation or sponsors, usually for specific uses. Generally they are given in limited amounts to established institutions or to gifted or needy individuals within those institutions. Usually they are not given as budget aid. STVS with its present status is not likely to attract grants of this type because of its unsecured future.

External donor agencies are best suited to support STVS for now since they can treat it as a project like it was done since its inception. However, time horizons for regular donor support are usually short with two to three years. This is much too short to build a higher education institution from scratch, even in orderly political circumstances which do not exist in Somalia. This means that with continued donor support, unless it is on a secure long-term base, STVS will not be able to achieve the necessary status for recognition, accreditation and credibility which are essential for the much wanted positive impact and effectiveness.

This makes it crucial to establish ownership. It is so important in practical terms whether the owner will be AU-IBAR, the Somaliland Government, a board of trustees, or a private, non-profit making legal entity under Kenyan law. What is important is that only a confirmed legal status will allow long term planning on all levels of activities of STVS, from investments to curriculum development to staff recruitment. It is acknowledged that the political background for the establishment of ownership is very difficult. Terra Nuova and the STVS management and staff have prepared the way for a much needed and sustainable contribution to economic security in the Somali Ecosystem. In the process more than 4 million Euros were spent. It is high time for some of the stakeholders to show political commitment.

Critical Summary of Section D

Like with all projects in tertiary education impact and effectiveness will become noticeable only after a longer time. The best indicator will always be the first graduate returning to the institution as a teacher. In the case of STVS I would estimate that a proper impact evaluation will become possible earliest after another five to six years of continued operation and external support.

STVS has almost achieved technical sustainability. The bulk of the investments will be implemented by the end of phase 2. The school's demonstration farm, the teaching clinic, a service laboratory as part of the reference centre could be installed easily and cost-effectively early in a potential Phase 3. Once this has been done investment needs will go down to maintenance level.

Financial sustainability will depend on establishing ownership and a legal framework for STVS. Terra Nuova and the STVS management and staff have prepared the way for a much needed and sustainable contribution to economic security in the Somali Ecosystem. In the process more than 4 million Euros were spent. It is high time for some of the institutional stakeholders to show political commitment.

SECTION E: RECOMMENDATIONS FOR THE WORKPLAN TO THE END OF THE PRESENT PROJECT PHASE

General recommendations

There are three grave shortcomings in the STVS project Phase 2 which need to be mentioned. They cannot be related to the logframe since they were not considered in the project planning. Three issues need to be addressed here. One is the establishment of a teaching and demonstration farm, the second is the establishment of an animal clinic for the local public, and the third is an eventual review of the schools curriculum.

A demonstration and teaching farm is neither established nor foreseen in the Phase 2 project plan as it was in earlier versions⁸. This needs to be amended. I have never found an animal production training institution worldwide which was without one. A school of this character can not rely on chance when animals are needed for teaching purposes. This is inefficient, time consuming and costly if teachers and students do not have immediate access to even a small number of the most important livestock species. There are many aspects in the training of veterinary technicians which require frequent handling of animals for practicing animal restraint, sample taking, vaccination, body condition scoring, various treatments, and last not least confidence building in students when handling large animals. It is also important that students see regularly healthy and productive animals instead of only patients. Furthermore the farm could demonstrate to the public small and simple interventions to increase productive and to minimise hygienic risks. This could also be part of the reference centres activities.

A similar serious deficiency is the lack of a clinic for outside patients. This would provide valuable training opportunities while simultaneously serve as a public relations tool to the local community. This would considerably reduce the travelling time for students going into the field to find patients and would greatly increase visibility of the school for the local public. Since Sheikh is conveniently situated along the stock route from Burao to Berbera there would be ample numbers of patients.

An animal clinic had been included in the tender for the STVS facilities but was withdrawn as the design while beautiful was much too expensive. The planned amphitheatre would have done proudly in any Western European institution but in the STVS context it bordered on the ridiculous. Here, as for the farm, careful planning is required to meet all training needs while also providing a level of sophistication appropriate to local conditions. The planning of a clinical amphitheatre with attached treatment rooms and surgery was clearly overshooting that target.

⁸ Excerpt from Eco-Fin Analysis Report 2004: Veterinary trainees at all professional levels need to practice their skills with animals like medical trainees with human patients. Few Somali livestock owners will allow trainees to touch their animals (no German farmer either). Consequently any veterinary training institution needs its own animals which need to be kept in a farm. If a farm is needed in a training institution it might as well be run at a moderate profit and also serve as a demonstration unit for the interested public. This is common practice all over the world (FU Berlin, Nairobi University, Makerere University, Addis Ababa University at Debre Zeit etc). For the purposes of the school, e.g. for teaching, practicals, and a limited degree of self-sufficiency in food production, and in view of the land area available, 10 dairy cows and dairy camels each should be envisaged, two small herds of approx. 40 sheep and goats, and a few donkeys.

Simple shaded enclosures, partially paved, with feeding and watering installations, roofed areas for forage and feed storage, and a roofed hand-milking parlour taking two animals at a time would be adequate. With that total number of livestock the operation of a 16 m³ fixed-dome biogas digester is feasible as has been proved by GTZ Special Energy Programme in primary schools and small farms in Tanzania. This would allow energy recovery as well as the most efficient and environment friendly recycling of water and nutrients within the farm. An integration of the domestic wastes of the school could be considered.

The third and last issue is the curriculum, in particular its duration⁹. After the broad animal health training during the first two years the narrow focus of the final year curriculum aiming solely at public sector employment in export certification could be counterproductive as animal health technicians are bitterly needed in other sectors and on other levels of the livestock production industry in the Somali ecosystem. This and the course duration are inviting some justified criticism. A grand curriculum review should be scheduled for a next phase of the project to deal with this issue.

Specific Recommendations

The following recommendations arise directly from the project log frame and are aiming to consolidate the progress made to date during the first part of Phase 2 and prepare continuation into a next phase which is needed to safeguard what has been achieved so far.

1. Finish building activities, move to final premises. This is the most important step towards consolidation of the whole programme. Although courses are conducted at a very commendable standard in the rented temporary premises the situation restricts student intake to the full complement. It hinders efficient use of laboratory and library facilities, increases running costs of the school and reduces school income because of small classes and reduced fees (10\$ instead of 40\$ per month). The construction work on the relocated intermediate school has proved that building can be carried out efficiently in very short time, maintaining high standards if sufficient supervision on site is provided (ANNEX 10). With all architectural work completed and a civil works expert in place the rehabilitation should be finished before the end of Phase 2.
2. Further consolidate curriculum and assessment procedures (data base). The work on the curriculum is well advanced. The monitoring and assessment programme is also in place but needs a better organised and streamlined data base to operate smoothly. This task is beyond the ability of the current project personnel. A specialist should be employed on a short-term basis.
3. Recruit additional tutors. It has been pointed out in various contexts in the MTE that teaching staff needs to be increased to improve quality and regularity of courses. There also needs to be a strategic reserve in case of sickness, leave, sudden resignation or other unforeseen events. In particular establishing and running the reference centre will make additional and high demands on teaching staff and should be catered for in good time.
4. Establish tracing procedure for graduates. The first graduates will be leaving STVS in July 2007. An important tool for future adjustment of school policies in

⁹ Excerpt from Eco-Fin Analysis Report 2004: The curriculum foresees a two-year general course followed by one year of specialisation as either animal health inspector or meat inspector. Together with the four months foundation course this appears long for the award of a technical diploma. In pre-collapse Somalia veterinary technicians were in a three-year course, when they were intermediate school leavers and in a two-year course when they had finished secondary school. Entry condition to STVS is the secondary school certificate. It could be argued that the STVS course should consequently take only two years which would reduce the costs per student by one third. However, nobody can be certain at present of the quality and performance of secondary school leavers from various areas in Somalia by now. Only experience gained conducting the courses will allow to adjust the curriculum according to students' capabilities and performances. A shortening and intensification of the course might become possible but it could also become necessary to lower the rather ambitious standards of the present curriculum. The curriculum is comprehensive and rigorously structured. The amount of detail considered in its preparation is impressive. The complete assessment of the curriculum can be conducted only after a reasonable number of the first graduates have found employment. The earliest date for that will be 2008/9. It would not be advisable to make substantial changes in the present course design before it has been tested in that way.

terms of intake volume and courses and specialisations offered will be feed back on the acceptance of the graduates into the public and private livestock sector in Somalia and the Somali ecosystem. A tracing procedure should be established which allows close contact to former students over longer periods. Maybe this could be done through an Alumni Association, which offers annual events, a newsletter carrying job offers and/or a functioning and actively operated website. The technical task could be placed with the reference centre.

5. Develop objectives, requirements and budget for reference centre, develop STVS website. The formal development of the reference centre which figures prominently in the project proposal has been neglected. It was probably assumed that this would be an incidental by-product of having the school up and the courses running. I suggest that some significant effort is made to outline in detail tasks, objectives and challenges for such a centre, together with associated personnel and funding requirements. This should be done as soon as possible to facilitate inclusion of these plans into the next phase proposal for STVS.

Some possible tasks for the reference centre could be literature searches, establishing contacts between the Somali livestock sector and foreign experts and/or professional organisations, conducting short courses for livestock owners, traders, veterinary personnel, and development project staff on recent developments in the national and international livestock sectors. If a service laboratory was included in the reference centre samples from the field could be processed. Analytical results could be accumulated into a reference data bank. All these services would have to be done against payment. A functioning reference centre of good standard will certainly attract support requests from both private and public sectors and can provide a focal point for other projects operating in livestock production, processing and marketing. Synergistic effects could arise from this if more projects would place facilities at the STVS site like SAHSP is doing presently with its diagnostic laboratory.

6. Develop objectives, requirements, physical plans and budget for demonstration farm and animal clinic. A demonstration farm and animal clinic will have similar public relations effects on the local scale as the reference centre will have regionally. Likewise it cannot be expected that such farm could be operated again as an incidental side activity of STVS. It does not need to be extensive, elaborate and way beyond the operational capacity of local livestock farmers, but it needs to contribute, by demonstration, to improved production systems and increased livestock productivity in the local community. Like with the reference centre objectives should be set, and plans drawn up for structures, facilities and funding as well as for personnel needed, to include it into next phase planning. The tasks outlined under 5 and 6 should be covered by a consultancy to TN since there does not appear to be much free capacity for this among the present STVS and TN staff.
7. Decide legal status issue, implement procedures to assure legal status as soon as possible, give particular emphasis to regional aspect. This is probably the most crucial issue for the sustainability of STVS. Although it could be run for some time in its present form, as an NGO project, this cannot be permanent. Ownership and legal status need to be developed and established. If the regional and autonomous character of STVS is to be secured an active if not ag-

gressive lobbying in this direction has to be initiated. I have noticed distinct reluctance with the present stakeholders to tackle the issue seriously. This is certainly due to the very difficult political situation and the extremely fluent stage of Somalia politics. There is a proposal by a legal expert who had been commissioned by TN, which in my view has great merits in allowing political neutrality but is not even discussed seriously in the Steering Committee. Some resources need to be allocated to this issue. One step in that direction would be the resurrection of the post of Institutional and Partnership Advisor, possibly through a consultancy based at Terra Nuova but with easy access to all other stakeholders. Bringing in TFG at least as observer into the steering committee might also be of help.

Immediate attention is needed. A consultant should be recruited by latest July 2007 or, alternatively the task reallocated within STVS and TN staff. Negotiations should be conducted with individual stakeholders and SC meetings should be called frequently as long as an agreement has been reached. Basis for the negotiations should be the suggestions made by the legal consultant of TN to establish a private legal entity under Kenyan law. General agreement needs to be reached by the end of Phase 2. Legal procedures could then be started with the beginning of Phase 3 of STVS.

Should the Republic of Somaliland unexpectedly achieve independence and international recognition a different approach could be taken. Ownership could then be taken by one of the line ministries.

8. Develop business plan for STVS. This is in direct connection with the previous point. Nobody can expect that STVS as an institution of tertiary education will be financially self-supporting in the foreseeable future, if at all. As STVS will contribute to safeguarding the economic success of the Somali ecosystem livestock industry it should be entitled to some share of its profits. However, this will remain wishful thinking and a matter of economic projections based on more or less dependable assumptions if STVS does not attain a legal status and becomes operational as a legal and commercial entity, even if on a non-profit making base. Only establishment of a legal status will help in that respect.

This is not an issue which can be forced before the legal status is not clarified. However, elaborating budget plans for different scenarios will be useful. As mentioned before, STVS will need external funding for a long time to come, although emphasis on budget lines will shift from investments to maintenance and staff costs. Budget alternatives, taking into account some of the suggested changes and improvements (curriculum, clinic, farm, reference centre), must be developed in the immediate future, i.e. within the next two to three months. Only this will allow solicitation of external funds for a Phase 3 of STVS. Preparations for the fourth intake of students are made now. They will arrive in November 2007. By then continuation needs to be secured.

9. Follow-up accreditation issue, initiate formal accreditation procedure with at least one of the regional institutions. Accreditation with at least one of the regional institutions is a must to ensure market value and job opportunities for the graduates of STVS. The process is basically governed by academic concerns, which could be satisfied without problems if present academic standards in STVS can be maintained or further improved. But, as with the business plan,

the final decision can only be made on proof that the institution is a legal entity with sustainable financing. This means that a lot of ground work can and should be done on academic issues but that formal accreditation can be achieved only after legal recognition. Again I would recommend that a greater effort is dedicated to solving these interrelated problems of legal status, business plans, and accreditation by establishing a position in STVS or TN solely responsible for these issues.

As with the two previous issues accreditation is crucial for survival of STVS. The College of Agriculture and Veterinary Science of University of Nairobi would be the most appropriate partner in terms of proximity and logistics. In view of the complex bureaucratic process involved STVS negotiators will need a long breath and need to offer attractive incentives to UoN. Consulting fees will be one issue but also extended research opportunities, common programmes, staff exchanges and institutional visibility will play a role. Provision for such things will have to be made. The same is the case with other potential partners in the region like Makerere University, Debre Zeit, or Khartoum.

The sequence of tackling the three last issues (7, 8, and 9) needs to be in that order. All three are of equal importance, but without ownership and legal status no sustainable funding and no accreditation.

Revised Logical Framework

The existing log frame needs to be changed for the remainder of Phase 2, the proposed revised log frame can be found in Annex 5.

OVI and sources of verification for the overall objective should be deleted. They are too broad to be influenced markedly by the presence or absence of STVS.

The OVIs for the project purpose need to be modified. Participation in seminars and conducting consultancies at this early stage of STVS build-up is unrealistic and no priority tasks for STVS staff. Since the documentation centre is not yet functional contacts made from outside are unlikely. The completion of the physical facilities and the installation of the library by end of phase 2 are more appropriate achievement indicators. It is of similar importance to develop the concept, objectives and tasks for library and reference centre and plan for staff and funding as well as the fee structures for outside customers. Under assumptions the soft and non-committal "proactive role of the international community" has been deleted.

In the formulation of result 1 the term "recognised" should be changed to the neutral term "3-year" since recognition or better accreditation will definitely not be achieved during phase 2. The first four OVIs listed for result 1 are applicable and have been achieved. The second and third intake stayed below the target of 30 students per class. This was due to the limited space in the interim premises of STVS. The target should be maintained for the fourth intake in November 2007 when STVS has moved to the final premises. The last OVI should be specified more clearly to "Accreditation procedure of STVS formally initiated with at least one regional institution by the end of phase2". Under assumptions the non-committal "proactive role of the international community" has been deleted and replaced by the one on "political and social stability".

Result 2 has not been achieved to a large extent. The OVIs need to be adapted to that. Indicators on the completion of physical facilities, as well as programme, op-

erating routines, and fee structures replace indicators on customer satisfaction. Under assumptions has been added "interest of the Somali livestock sector in the reference centre services". Under assumptions the non-committal "proactive role of the international community" has been deleted.

Result 3 needs to be reformulated since the original result is not achievable in the remaining part of phase2. Establishment of STVS legal framework, business plans and accreditation can only be initiated during Phase 2 but not fully implemented. The revised OVIs are also indicative of this change. Under assumptions the non-committal "proactive role of the international community" has been deleted and has been replaced by assumptions on continued donor support and willingness to accept ownership of STVS.

No changes have been made under activities.

SECTION F: SUMMARY RECOMMENDATION FOR A POSSIBLE FOLLOW-UP PROJECT

1. Ascertain legal status of STVS
2. Ascertain accreditation of STVS
3. Set up all necessary management bodies
4. Grand review of the curriculum, i.e. duration, focus, additional specialisations, short courses, training units for project personnel
5. Establish and run reference centre
6. Establish and run demonstration farm and clinic
7. Increase student intake to 30 per class
8. Establish tracing procedure for outgoing students, establish alumni association
9. Establish cooperation with other projects
10. Develop strategy to reduce dependence on external funding and/or find new sources for funding

Overall Recommendation

STVS has made great progress during the past two years. It shows the promise of becoming a focal institution for veterinary training in the Somali ecosystem. Its sustainability is presently threatened by its undefined legal status more than by any other factor. This needs to be solved by a concerted effort of all stakeholders. STVS will need external financial support for a long time to come. I know of no institution in the tertiary education sector which is truly self supporting in the long term. Funding requirements will decline over time as investments into infrastructures will phase out and income will be generated through students' fees and paid services to the public. A long-term projection needs to be commissioned on this and a long-term commitment by donors should follow that.

Terms of reference

Mid-Term Evaluation of the Sheikh Technical Veterinary School (STVS II) project

A. Introduction

Project Title: Establishment of a Somali Regional Technical Veterinary School and Reference Centre (STVS) –Phase II (“The Action”)

Contract No: SO/0038/IT-COF/05

Recipient organization: Terra Nuova

Location: Somaliland, Sheikh.

Date of contract start: 1st July 2005

Date of contract end: 31st December 2007

Total contracted amount: (€) 2,210,526

- **EC contribution:** (€) 2,100,000
- **Other contributions:** (€) 110,526

B. Objectives of the Evaluation

General objective:

The mid term evaluation (**MTE**) will analyse and assess the implementation of the project in terms of relevance, efficiency, effectiveness to date, achievements and linkages etc. against the original objectives, plans and contract documents as laid down in the Project Logical Framework. In particular it will undertake a review of the relevance and quality of design, efficiency and effectiveness of implementation, impact and potential sustainability and advise on any revision of the project approach and logical framework as deemed necessary.

C. Background

Sheikh Technical Veterinary School (**STVS**) was designed with the overall objective to ensure that Somali people have access to efficient and effective veterinary services in order to safeguard public health, improve livestock production and animal welfare, and sustain livestock export. The project purpose is to establish a regional technical veterinary training and reference centre educating sufficient numbers of young professionals and responding to demands from the Somali livestock industry.

This is achieved by establishing **STVS** which offers a recognised 3 year veterinary diploma course, targeted at supporting the livestock export industry. The school adopts an interactive and practical methodology, with emphasis on field work to complement theoretical inputs. It is open to secondary school leavers. On completion of the first 2 years of pre-clinical common studies, students pursue an elective year in livestock product inspection or animal health. A reference centre for the Somali livestock industry is also established, with Somali veterinary professionals filling the positions of academic tutors and providing technical advice to local administrators, policy makers and individuals involved in the livestock sector. The whole intervention builds skills and technical knowledge necessary to overcome the constraints affecting the country's veterinary services, improve the performance of the livestock export sector, and enhance the economic welfare of the country as a whole.

Three results are expected to be achieved: i) STVS conducts a fully recognised veterinary diploma course on a regular basis; ii) STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre; iii) Institutional framework of the school and administrative set-up is fully developed.

The **STVS** project is currently at its mid-way stage, which is an opportune moment to evaluate progress in terms of outputs achieved by the project vis-à-vis its targets, achievement of projected results as per the approved log frame and related OVI, and preliminary assessment of the action's relevance, efficiency, effectiveness to date, achievements and linkages. Furthermore, the review should advise on areas of success and future focus. These terms of reference are intended to guide the review process. The review will start not later than February 1st 2007 and be completed within a **21** day period. The findings of the report should be available for consideration by Terra Nuova at a planned meeting to be held within the end of March 2007.

The review will be carried out by a consultant with specific expertise on regional veterinary training and livestock trade marketing. The selected candidate should have considerable experience and skills in the areas of veterinary training institution setup, curriculum accreditation/recognition and livestock trade. Since the MTE is a requirement of the grant contract, the expert will be asked to assess the progress of the **STVS** in achieving its objectives, checking the current project and possible needs for re-orientation in the second half of implementation under the following guidelines:

D. Issues to be studied

The MTE of the **STVS II** is expected to assess the project's achievements (curriculum development and implementation as well as other activities of the project) after 18 months of implementation, the constraints experienced during implementation, and its relevance, efficiency and effectiveness at all levels. Moreover, the MTE will suggest ways of using lessons learned to fine-tune the implementation procedures for the second half of the intervention, including the feasibility of completion within the agreed time frame and any need for extension of the implementation period. The outcome of this exercise shall be used to reflect on the strengths and weaknesses of the current implementation approach. It should also suggest how to enhance strengths and correct weaknesses.

E. Methodological aspects

The **MTE** will collect relevant (primary) data and information as a way of making an independent assessment and recommendation, but will also make reference to quarterly reports.

The evaluation shall be undertaken in close consultation with the **STVS** staff. Where appropriate, the evaluation may use participatory evaluation techniques (sampling, questionnaires, rapid appraisals), which will give the project stakeholders and beneficiaries an opportunity to play a key role and contribute actively in the evaluation exercise. It is considered important that there is a sense of ownership of the process by all the parties concerned.

The **MTE** will use the European Commissions' Project Cycle Management (**PCM**) Integrated Approach and Logical Framework method to analyse the implementation of the project as described in the booklet "Evaluation in the European Union: A Guide to the Evaluation Procedures and Structures currently Operational in the Commission's External Co-operation Programmes". In order to fulfil the objectives of the evaluation process, the following issues will be given particular attention:

Project preparation and design

The **MTE** will assess whether the Action, as laid down in the original project document (annex I "description of the action" of the contract), was relevant in whole or in part to the needs and priorities of the livestock sector in the Somali Ecosystem. Furthermore the team will perform the following activities:

- Review the project design phase (in particular the process which led to the **STVS** project), and assess the management and impact of the project so far.
- Evaluate whether the inputs proposed were appropriate to meet the various objectives, in particular the designed curriculum, the teaching staff, and methodology of implementation, the management and financial structures for planning, implementing and monitoring the various activities.
- Evaluate whether the design and planning of the project components was adequate and appropriate in order to attain the project purpose within the limits of time and resources, and whether the project purpose has contributed significantly to the overall project objectives.
- Evaluate whether the recommendations of the quarterly reports have been taken into account and incorporated where appropriate.
- Evaluate the rationale underlying the design of **STVS** as a project. This may entail an assessment of the social, institutional and economic environment of the programme.
- Assess the complementarities and coherence between the **EDF**-funded and other donor-funded activities directly related to **STVS**.

Relevance of the project

The **MTE** will assess the extent to which the objectives of the project are consistent with requirements of the potential beneficiaries', national needs, and global priorities and partners' and donor's policies. More in detail they will:

- Assess the internal coherence of the log frame (relationship between goals, purpose and results stipulated in the log frame). Particular attention will be paid to the coherence between the log frame of the project proposal, and the working log frames followed during implementation.
- Evaluate whether the project purpose was realistic and relevant to the overall objectives.
- Assess the Institutional linkages of **STVS** (**LICUS, SAHSP, LMTP, University of Bologna, University of Nairobi, University of Makerere, CTTBD, Kenya Meat Training Institute, University of Burao and Amoud University**) and assess how they affected the relevance of the project.

Efficiency of implementation and effectiveness to date

The efficiency and effectiveness of the project will be assessed in the light of the specific objectives of **STVS**. The **MTE** will measure how economically resources/inputs (funds, expertise, time, etc.) have been converted into results, and to which extent the project objectives have been achieved, or are expected to be achieved, taking into account their relative importance. In more detail the **MTE** will:

- Evaluate the implementation of the project at all levels and identify factors that might have affected it.

- Assess designed curriculum, methodology of teaching, assessment system, teaching staff and their compliance for recognition and accreditation purpose;
- Assess the management of financial aspects.
- Evaluate the level of integration of activities of **STVS** in addressing its results.
- Evaluate the relationships between the activities and the results of **STVS** achieved so far, taking into consideration the resources mobilized.
- Evaluate the need for any eventual extension to efficiently accomplish some of the planned results in light of the remaining project duration. Priority areas of work should be clearly identified, cost effectiveness of additional support demonstrated and time frame indicated.

The following issues pertinent to the **STVS** co-ordination and cross cutting issues will be addressed:

- Analyse to which extent the strategies established by the **STVS** have contributed to fulfilling the project objectives, and if and how they have been translated into project activities/work plans.
- Assess the internal monitoring and evaluation mechanisms as well as the timeliness and adequacy of project reporting.
- Assess the performance of the technical assistance provided by the various consultants assigned to specific aspects of the project.
- The **MTE** will also evaluate the appropriateness, efficiency and efficacy of the organisation, management systems and reporting channels set up by **STVS**.

Expected impact and sustainability to date

The **MTE** will assess the impact of the **STVS** and the sustainability of the results and actions undertaken so far, namely i) the continuation of benefits from the Action after major development assistance has been completed, ii) the probability of continued long-term benefits, and iii) the resilience to risk of the net benefit flows over time. This assessment is based on the premise that tangible results from specific activities leading to action for change may still be in the pipeline or in the making, but actions and activities including participation of stakeholders in the information generation process, have already created awareness among the stakeholders about issues and their implications, leading to autonomous initiatives for change, which will be later reinforced by more systematic action. In particular the **MTE** will:

- Assess whether the specific objectives are likely to be achieved, and if not identify the reasons impeding achievements.
- Assess the problems to be resolved which are being addressed, and eventually assess problems that have emerged out of the implementation of the project.
- Evaluate the measures aimed at ensuring the sustainability of the results of **STVS** at the regional level. Particular attention will be given to the board of trustees expected to be the owners of the school after establishment.

Conclusions and recommendations

The principal mandate of the **MTE** is to assess the achievements of the project to date. However, based on the lessons learned, it would also be expected to indicate areas/options for change to the current approach or continued support or extension of implementation time and this should be based on cost-effectiveness considerations. Such indications should be further validated towards the termination of the project.

The conclusions should lead to the recommendations.

The lessons learned, conclusions and recommendations shall appear as separate sections in the report.

The **STVS** will make available to the **MTE** the following documents (tentative and initial list):

- Preparatory documents to the Grant contract
- Grant contract
- Narrative and Financial reports
- **STVS** consolidated Work Plans and Time schedules
- Quarterly Reports
- Drawings and tender documents for major physical rehabilitation works

E. Reporting

Inception report

The Inception report will be regarded as a working document and its format must reflect this requirement. It should be a maximum 5 pages. The report will be based on preliminary discussions with the EC Somalia Operations in Nairobi, staff of the Terra Nuova Office, the Project Management staff and key project personnel met.

Aide Memoire

At the end of the field assignment an Aide Memoire with the preliminary findings and recommendations will be prepared and submitted in 3 hard copies incl. one electronic version in Word format to Terra Nuova. The Aide Memoire will be presented and discussed in Nairobi at the end of the field work including key stakeholders such as EC, AU/IBAR, RDE, Italian Cooperation, etc).

Final report

The Final Report should follow as closely as possible the format of evaluation reports according to the European Union lay out. A self contained summary of not more than 3 pages with fully cross referenced findings and recommendations should be included in the main report, which should not exceed 30 pages plus annexes. The report must have a table of contents incl. annexes.

The Annexes should include: TOR for the Evaluation, list of persons, beneficiaries and organisations met, itinerary of the mission, documents consulted, list of all used acronyms, maps and pictures.

The Draft Final Report shall be submitted in 3 copies to Terra Nuova. The main text of the Draft Report shall be in English with an executive summary (not more than 5 pages each).

The Draft Final Report must be submitted within 2 weeks after completion of the fieldwork.

The Final Report shall be presented within 2 weeks of receipt of written comments from the client and other interested parties. Such comments must be submitted to the consultant within a maximum of 4 weeks after the presentation of the Draft Final Report, by the PCO/Terra Nuova. If no comments are received the contractor may resubmit the Draft Final Report as the Final Report.

The Final Report shall be submitted in 3 copies in the English language to Terra Nuova. The Final Report must also be provided in an electronic version on a CD-ROM in Word and PDF format. The Final Report shall be submitted not later than 30th March 2007.

F. Expertise Required

The consultant should be a *Veterinarian or animal production specialist with a solid background and experience in curriculum development and educational management*

The Consultant should hold a post graduate degree and with at least 10 years relevant experience and at least 5 years specific experience in the main fields such as veterinary teaching, agricultural economics, project management, curriculum development, educational institution management and interactive teaching methodologies at tertiary level. He/she/they should have comprehensive knowledge and experience from livestock programmes in developing countries, preferably in Africa. He/she will be familiar with EC rules, procedures and formats, especially in relation to evaluations and the PCM approach. Fluency in English required.

The Consultant will be responsible for:

- ✓ Overall aspects of the evaluation process as referred to in these Terms of Reference.
- ✓ They will be directly responsible to Terra Nuova for the overall quality and consistency of all reports and documents produced.
- ✓ Carrying out any other task as required by the client, in order to fulfil the objectives of the ToRs for the evaluation.

H. Work Plan and Time schedule

The evaluation process should start not later than February 1st 2007. The period of performance is as follows:

21 days with 14 days [between literature review (7 days) and field work (7 days)] and 7 days for reporting.

Due to time constraints for this project, the consultants will be required to work over weekends so as to complete the field work together with the literature review within 2 calendar weeks and the reporting within 1 calendar week.

The consultant to conduct this assignment will undertake the following visits:

- Terra Nuova offices in Nairobi, where meetings with the Project Management Team, Terra Nuova and SAHSP team member will be organised;
- EC Somalia Operations in Nairobi;
- AU/IBAR, RDE and Italian Cooperation in Nairobi
- Somaliland. (Hargeisa (Ministry of Livestock, Ministry of Planning, University of Hargeisa) Sheikh (STVS site, Mayor's office), Buraq (University of Buraq, Veterinary Department), Boroma (University of Amoud)

Evaluator: Horst Jürgen Schwartz, born 21.11.1941, Berlin, Germany

Present address: McNair Promenade 22, D-14167 Berlin, Germany

E-Mail: horst.juergen.schwartz@agrار.hu-berlin.de

Education:

1947 - 1953	Primary School in Berlin
1953 - 1961	Secondary School in Berlin
20.2.1961	University Entrance Examination
1961 - 1964	Studies of Architecture at the Technical University of Berlin
1965 - 1966	Agricultural practice
1966 - 1970	Studies of Agricultural Sciences at the Technical University of Berlin
13.11.1970	Final degree equivalent to MSc agric.
19.11.1974	Final degree examination Ph.D. in Agricultural Sciences (Farm Animal Behaviour) at the Faculty of Agriculture, Technical University of Berlin

Professional experience:

1.11.1970 to 15.2.1975	Assistant Lecturer at the Department of Animal Production, Technical University Berlin
19.2.1975 to 31.12.1977	Lecturer at the Department of Animal Production, University of Nairobi, Kenya
1.1.1978 to 31.12.1980	Project leader of the UNESCO-MAB Research Programme "Traditional Livestock Management in Arid Areas of Northern Kenya"
1.3.1981 to 28.2.1987	Senior Lecturer at the Department of Animal Production, University of Nairobi, Kenya; during the same period Project Leader of the "Small Ruminant and Camel Research Unit" University of Nairobi
1.3.1987 to 31.3.1992	Professor (Biology of Livestock Production) Department of Animal Science, Technical University Berlin, Germany
since 1.4.1992	Professor Livestock Ecology, Institute of Animal Sciences, Humboldt-University of Berlin
since 1976:	Various short term studies and consultancies and/or cooperative Research Programmes with GTZ, DAAD, FAO, ISNAR, EU, World Bank, and private consulting companies in: Kenya, Somalia, Sudan, Tunisia, Burkina Faso, Malawi, Tanzania, Ghana, Djibouti, Malaysia, Sri Lanka, Bahrain, Canary Islands, Turkey, USA, Israel, Canada, Ethiopia, Scotland, Uganda, Eritrea, Cuba, Pakistan

I have been involved in research on the ecology, utilisation and management of pastoral livestock production in the arid and semi-arid tropics, particularly in East Africa, the biology and ecology of camels, and on the conflicts arising between nature conservancy interests and livestock farming both in Africa and in Europe. I have served as a consultant to various international agencies in numerous African, Asian and Caribbean countries. I participated in and/or led in curriculum development for MSc courses in University of Nairobi, Humboldt University of Berlin, Makerere University Kampala, Uganda, in the University of Namibia and, presently, within an EU-Asia Link programme at the University of Agriculture Faisalabad, Pakistan.

Methodology applied for the evaluation

Prior to travelling (January 2007): Preparatory study of project documents made available by Terra Nuova, i.e. Project proposal, project document, interim technical reports, and curriculum descriptions, as well as of background literature drawn from various internet sources (Annex 7).

29.01. to 02.02.2007: Informal talks and discussions with representatives of Terra Nuova, SAHS, Royal Danish Embassy, AU-IBAR, EU-Delegation Somalia Unit, University of Nairobi, German Academic Exchange Service. Getting access to more project documents (minutes of steering committee meetings), preparing visit to Somaliland (Annex 6).

03.02. to 10.02.2007: Visit to Somaliland, informal talks, discussions and interviews with representatives of Ministry of Livestock, Ministry of Education, Somaliland Chamber of Commerce, regional administrations (Sahil Region, Western Region) and several regional veterinary officers (Annex 6). Interviews and discussions with all STVS staff (management, tutors) and students, participation in classes, i.e. lectures, field demonstration, laboratory and computer pool. Visit to all STVS interim facilities, the proposed building site for the permanent facilities, and the relocated and finished intermediate school buildings. Study of final building plans as prepared for the tendering process.

11.02. to 20.02.2007: Return to Nairobi, further talks to representatives of FAO Somalia, Terra Nuova, Italian Embassy, introduction to legal situation of STVS by TN legal consultant, informal debriefing at EU Somalia Unit and formal debriefing at AU-IBAR. Handing in Aide Memoire to Terra Nuova.

	Intervention Logic	Objective Verifiable Indicators	Source of Verification	Assumptions
Overall Objective	Veterinary services in the Somali region safeguard public health, protect animal welfare, improve livestock production and sustain livestock export	<ul style="list-style-type: none"> - Increase in household income derived from livestock production and trade - Increase in livestock export figures and/or values 	<ul style="list-style-type: none"> - Data available at Government level - Assessment reports - Other project's reports (e.g. livestock marketing support, FSAU) 	
Project Purpose	A regional veterinary training system supplies competent technicians and provides professional advice and support to major stakeholders involved in the Somali livestock industry	<ul style="list-style-type: none"> - at least 50 % of STVS graduates having successfully passed full STVS training cycle have been integrated into public sector or private industry within 6 months from final exam in July 2007 - STVS has executed or actively participated in at least 9 seminars by the end of Phase II - STVS staff has executed at least 3 consultancies on request from stakeholders of the livestock industry by the end of Phase II - more than 100 contacts have been made to the documentation centre by the end of Phase II 	<ul style="list-style-type: none"> - Project monitoring and final reports - Assessment reports - Workshop minutes and proceedings - Consultancy reports - Tracer studies (trainees) 	<ul style="list-style-type: none"> - Policies aimed at importing foreign professionals are not favoured by Somali authorities - Administrations in Somalia continue to support the establishment of competent livestock services - Policies aimed at increasing the marketability of the Somali livestock and at lifting the ban on export of livestock from the Somali region are supported from Somali line ministries

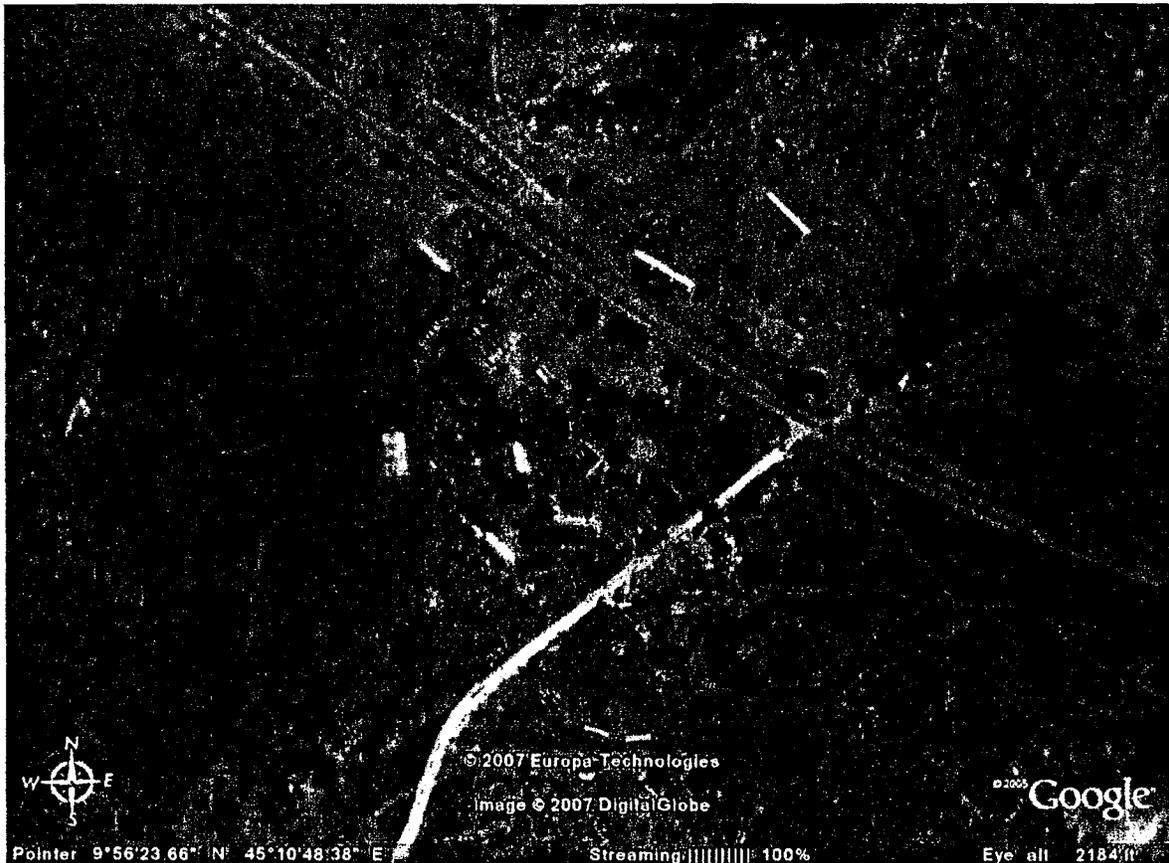
<p>ilts</p>	<p>1. STVS conducts a recognised veterinary diploma course on a regular basis</p>	<ul style="list-style-type: none"> - STVS theoretical and practical curriculum document completed, implemented and amended as necessary, by the end of Phase II - Letters of agreement and co-operation exchanged with at least 3 academic institutions by the end of Phase II - Annual drop out of students is less than 10% - At least 5 different sites visited for publicising new entry exam per year - Minimum 30 applications accepted for second and third intake - Accreditation mechanisms of STVS initiated 	<ul style="list-style-type: none"> - Project reports - STVS management procedures and bylaws - Course curriculum and material - School reports - letters of agreements with other academic institutions 	<ul style="list-style-type: none"> - Continuous proactive role of the international community in understanding better the social and political Somali state of affairs - Political and social stability within the Somali Ecosystem allows students and trainers unlimited access to the school - Somali livestock industry keeps on accepting the concept of regulated and transparent marketing and trade
	<p>2. STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre</p>	<ul style="list-style-type: none"> - Centre has signed partnership agreement with at least 4 internationally recognised institutions by the end of Phase II - Centre has organised at least 1 in-service training activities by end of Phase II - Minimum 70% of technical advice provided by the Centre to the Livestock Industry in 2006 and 2007 was rated satisfactory by the client - Library has recorded at least 100 search requests by end of Phase II 	<ul style="list-style-type: none"> - Library records - Conference/ workshop/ seminar outcome/ reports - Letter of intent/ Partnership agreements - Internal quality assurance protocols - Tracer studies (beneficiaries) 	<ul style="list-style-type: none"> - Continuous proactive role of the international community in understanding better the social and political Somali state of affairs - Somali livestock industry keeps on accepting the concept of regulated and transparent marketing and trade
	<p>3. Institutional framework of the school and administrative set-up is fully developed</p>	<ul style="list-style-type: none"> - Legal status of the school defined and corresponding agreements signed by relevant institutions by end of 2006 - School technical and management board operates in a satisfactory manner by end of 2006 - Different protocols developed, implemented and enforced (recruitment, selection, finance, laboratory, ...) by end of 2006 - Strategy for long term financial sustainability developed and approved by board within the first 8 months of implementation - New partners involved - Trust fund established and functioning by the end of first year of implementation 	<ul style="list-style-type: none"> - Consultancies report - Agreement with other institutions - Steering committee and Management Board minutes - Internal protocols - Monitoring records - Timetables - Accounting system documents - Financial plans 	<ul style="list-style-type: none"> - Continuous proactive role of the international community in understanding better the social and political Somali state of affairs

Activities	Means and costs (EURO) / EC Contribution		- Institutional stability of Somaliland government - Security and socio-political stability in the area enabling implementation of project activities
	Description	II Phase	
1.1 Set up and run interim training activities in Sheikh	Human Resources	1.080.350	
1.2 Rehabilitate and refurbish STVS training facilities, and move training activities to final destination.	Travel	19.800	
1.3 Further refine existing curriculum and develop additional components in line with overall learning objectives	Equipment and supplies	380.762	
1.4 Implement and refine students and curricula assessment system and regulatory system	Local Office and project cost	54.000	
1.5 Raise visibility of STVS and actively promote the School's reputation and objectives at local and regional level	Other costs and services	42.000	
2.1 Establish partnership agreements and related technology/ knowledge transfer systems with recognised regional and international centres	Real estate and works	489.000	
2.2 Establish and maintain communication network (academic and technical) with local stakeholders and beneficiaries.	Administrative cost	144.614	
2.3 Identify areas of interest and participate at/ organise technical conferences and seminars	TOTAL	2.210.526	
2.4 Set up and operate a comprehensive information and documentation centre			
3.1 Identify and establish the legal framework of STVS, with specific reference to its regional mandate			
3.2 Develop and establish business plan and secure medium term funding requirements			
3.3 Develop and establish sustainable management structure for STVS			
3.4 Support to STVS through Steering Committee			

ISED	Intervention Logic	Objective Verifiable Indicators	Source of Verification	Assumptions
Overall Objective	Veterinary services in the Somali region safeguard public health, protect animal welfare, improve livestock production and sustain livestock export			
Project Purpose	A regional veterinary training system supplies competent technicians and provides professional advice and support to major stakeholders involved in the Somali livestock industry	<ul style="list-style-type: none"> • at least 50 % of STVS graduates having successfully passed full STVS training cycle have been integrated into public sector or private industry within 6 months from final exam in July 2007 • documentation centre and library constructed and functional • objectives and tasks for reference centre and library formulated, services advertised 	<ul style="list-style-type: none"> • Project monitoring and final reports • Assessment reports • Workshop minutes and proceedings • Consultancy reports • Tracer studies (trainees) 	<ul style="list-style-type: none"> • Policies aimed at importing foreign professionals are not favoured by Somali authorities • Administrations in Somalia continue to support the establishment of competent livestock services • Policies aimed at increasing the marketability of the Somali livestock and at lifting the ban on export of livestock from the Somali region are supported from Somali line ministries
Its	1. STVS conducts a 3-year veterinary diploma course on a regular basis	<ul style="list-style-type: none"> • STVS theoretical and practical curriculum document completed, implemented and amended as necessary, by the end of Phase II • Letters of agreement and co-operation exchanged with at least 3 academic institutions by the end of Phase II • Annual drop out of students is less than 10% • At least 5 different sites visited for publicising new entry exam per year • Minimum 30 applications accepted for fourth intake • Accreditation procedure for STVS formally initiated with at least one regional institution by end of phase 2 	<ul style="list-style-type: none"> • Project reports • STVS management procedures • Course curriculum and material • School reports • letters of agreements with other academic institutions 	<ul style="list-style-type: none"> • Political and social stability within the Somali Ecosystem allows students and trainers unlimited access to the school • Somali livestock industry keeps on accepting the concept of regulated and transparent marketing and trade
	2. STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre	<ul style="list-style-type: none"> • Centre has signed partnership agreement with at least 4 internationally recognised institutions by the end of Phase II • documentation centre and library constructed and functional by end of phase 2 • objectives tasks, budget and fee structures for reference centre and library formulated, services advertised on web-site by end of phase 2 	<ul style="list-style-type: none"> • Project reports • Web-site • letters of agreements with other academic institutions 	<ul style="list-style-type: none"> • Political and social stability within the Somali Ecosystem allows students and trainers unlimited access to the school • Somali livestock industry keeps on accepting the concept of regulated and transparent marketing and trade • Somali livestock industry shows interest in STVS services and accepts fees

	<p>3. Establishing the institutional framework of the school and administrative set-up is formally initiated</p>	<ul style="list-style-type: none"> • Legal status of the school has been defined and corresponding agreements have been prepared • School technical and management board operates in a satisfactory manner by end of 2006 • Different protocols developed, implemented and enforced (recruitment, selection, finance, laboratory, ...) by end of 2006 • Strategy for long term financial sustainability drafted • New partners involved • Establishment of trust fund prepared 	<ul style="list-style-type: none"> • Consultancies report • Agreement with other institutions • Steering committee and Management Board minutes • Internal protocols • Monitoring records • Timetables • Accounting system documents • Financial plans 	<ul style="list-style-type: none"> • Continued donor support secured for next project phase • Regional institutions prepared to claim STVS ownership 																	
ities	<ol style="list-style-type: none"> 1.1 Set up and run interim training activities in Sheikh 1.2 Rehabilitate and refurbish STVS training facilities, and move training activities to final destination. 1.3 Further refine existing curriculum and develop additional components in line with overall learning objectives 1.4 Implement and refine students and curricula assessment system and regulatory system 1.5 Raise visibility of STVS and actively promote the School's reputation and objectives at local and regional level 2.1 Establish partnership agreements and related technology/ knowledge transfer systems with recognised regional and international centres 2.2 Establish and maintain communication network (academic and technical) with local stakeholders and beneficiaries. 2.3 Identify areas of interest and participate at/ organise technical conferences and seminars 2.4 Set up and operate a comprehensive information and documentation centre 3.1 Identify and establish the legal framework of STVS, with specific reference to its regional mandate 3.2 Develop and establish business plan and secure medium term funding requirements 3.3 Develop and establish sustainable management structure for STVS 3.4 Support to STVS through Steering Committee 	<p>Means and costs (EURO) / EC Contribution</p> <table border="1"> <thead> <tr> <th>Description</th> <th>II Phase</th> </tr> </thead> <tbody> <tr> <td>Human Resources</td> <td>1.080.350</td> </tr> <tr> <td>Travel</td> <td>19.800</td> </tr> <tr> <td>Equipment and supplies</td> <td>380.762</td> </tr> <tr> <td>Local Office and project cost</td> <td>54.000</td> </tr> <tr> <td>Other costs and services</td> <td>42.000</td> </tr> <tr> <td>Real estate and works</td> <td>489.000</td> </tr> <tr> <td>Administrative cost</td> <td>144.614</td> </tr> <tr> <td>TOTAL</td> <td>2.210.526</td> </tr> </tbody> </table>	Description	II Phase	Human Resources	1.080.350	Travel	19.800	Equipment and supplies	380.762	Local Office and project cost	54.000	Other costs and services	42.000	Real estate and works	489.000	Administrative cost	144.614	TOTAL	2.210.526	<ul style="list-style-type: none"> - Institutional stability of Somaliland government - Security and socio-political stability in the area enabling implementation of project activities
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Satellite Image of Sheikh Technical Veterinary School (STVS) building site
(Google Earth, January 2007)



Architects site plan for the rehabilitation, note the two semi-circles of old building for soft rehabilitation and the three larger blocks to the west which will be new constructions



List of persons / organisations consulted

NAIROBI

Lucy Wood, Educationalist, Terra Nuova Nairobi Office

Dr. Cyprien Felix Biaou, Project Manager STVS, Terra Nuova Nairobi Office

Dr. Henry Wamwayi, Chief Technical Advisor, Somali Animal Health Services (SAHS), Terra Nuova Nairobi Office

Anne Marie Madsen, Counsellor (Development), Royal Danish Embassy Nairobi

Dr. M. T. Traore, Head of Mission, Director, AU-IBAR

Dr. Hameed F. Nuru, Senior Policy Officer (Livestock and Fisheries), AU-IBAR

Dr. Francis Oloo, AU-IBAR

Dr. Dickens Chibeu, SERECU Coordinator, AU-IBAR

Dr. Samuel M. K. Muriuki, Team Leader, North Eastern Pastoral Development Project, AU-IBAR

Dr. Friedrich Mahler, Livestock and Environment, EU-Delegation Somalia Unit

Dr. Manfred Winnefeld, Education and Health, EU-Delegation Somalia Unit

G. von Fircks (Ms), Director, DAAD Regional Office for Africa

Dr. James Wabacha, UoN, Faculty of Veterinary Science, Department of Clinical Studies

Prof. Dr. M. Badamana, UoN, Faculty of Veterinary Science, Department of Animal Production

Dr. Abdulkadir M. Alim, FAO, Consultant on Livelihood Services

Massimo Castiello, FAO, Livestock Coordinator for Somalia

Graham Farmer, FAO Somalia

Alessandra Lustrati, Legal Expert, Consultant to Terra Nuova

HARGEISA

Dr. Mohamoud Abdillahi, Liaison Officer STVS

Leonardo M. Palma, Civil Works Expert STVS

Ali Ismail, FAO SWALIM Hargeisa

Ali Mohamoud Guled, FAO LICUS Project

Dr Idris Ibrahim Abdi, Minister of Livestock

Mohammed Hori, Vice Minister Livestock

Ali Abdi Odowaa, Director General, Ministry of Education

Abdullah Dirie Jama, Secretary General, Somaliland Chamber of Commerce

Dr. Mario Younan, Vétérinaires sans Frontières Germany, Programme Coordinator

Dr. Ahmed Hassan, Regional Veterinary Officer Western Region, Tog Wajaale border post

BERBERA

Mohammed Abdillahi Mohammed, Governor, Sahil Region

Dr. Ahmed Heybe Warsame, Regional Veterinary Officer Sahil Region & Port Veterinary Officer Berbera

Sheikh

Sam Ogolla, Junior Educationalist, STVS

Benson Wafula, Tutor, Livestock Economist, STVS

Mudathir Hassan, Laboratory Technician, STVS

Abdullahi Sheekh, Tutor, Clinical Studies, STVS

Dr. Abdullahi Ali Herzi, Tutor, Infectious Diseases, STVS

Everlyne Omulandu Alosa, Tutor, English Language and Learning Skills, STVS

Mohammed Abdullahi, Tutor, Information Technology, STVS

Abdulkadir Khalif, Tutor, Anatomy and Physiology, STVS

1st, 2nd, and 3rd year students, STVS

Burao

Hussen Mohamed Handulle, Vice Chancellor, University of Burao

Dr. Essar Nar Liban, General Secretary, University of Burao

Dr. Mohamed Elmi, Dean, Faculty of Veterinary Medicine, University of Burao

List of STVS project documents consulted

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Terra Nuova and UNA, April 2005
Establishment of a Somali Regional Technical Veterinary Training School and Reference Centre
2. Grant Contract no SO/0038/IT-COF/05
Establishment of a Somali Regional Technical Veterinary Training School and Reference Centre (STVS) Phase II
3. Draft Final Report; Framework Contract AMS/451 – Lot N° 1; February 2005
EU support to Sheikh Veterinary Training School (Somalia) – Study for a Project Financial and Economic Analysis (Including Risk Analysis and Probability Appraisal)
Consultants: A. Penney, M. Edelsten, H. J. Schwartz
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5. Minutes of the 2nd STVS Steering Committee Meeting, 17th February 2003, Italian Cultural Centre, Westlands, Nairobi, Kenya
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7. Minutes of the 4th STVS Steering Committee Meeting, 3rd December 2004, Italian Cultural Centre, Westlands, Nairobi, Kenya
8. Minutes of the 5th STVS Steering Committee Meeting, 21st December 2004, Maasha Allah Hotel, Sheikh, Somaliland
9. Minutes of the 6th STVS Steering Committee Meeting, 5th July 2005, Italian Cultural Centre, Westlands, Nairobi, Kenya
10. Minutes of the 7th STVS Steering committee Meeting, 23rd November 2005, Maasha Allah Hotel, Sheikh, Somaliland
11. Minutes of the 8th STVS Steering Committee Meeting, 16th May 2006, Kenya Continental Hotel, Nairobi, Kenya
12. 1st STVS Interim Technical Report July to December 2005
13. 2nd STVS Interim Technical Report January to June 2006
14. 3rd STVS Interim Technical Report July to September 2006
15. Blueprint, story flows, and course outlines of the STVS curriculum
16. Mission Report – Lucy Wood, Makerere University Kampala, Uganda, January 17th to 18th 2007
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7. <http://www.africa-union.org/home/Welcome.htm>
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9. <http://www.db.idpproject.org/Sites/IdpProjectDb/idpSurvey.nsf/wCountries/Somalia>
10. http://www.developmentgateway.org/countryprofile/?country_iso=so
11. <http://www.envirolink.org/external.html?www=http%3A//members.tripod.com/%7Esepado&itemid=1067>
12. <http://www.fao.org/>
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Background reading¹

Political history

The Somali people historically inhabited a large part of the Horn of Africa from the Awash River in the northwest to the Tana River in the south. The Somalis are a Cushitic people with a common Hamitic language, uniformly Islamic (Sunni) with a clan-based social system. In the 19th century the lands occupied by the Somali people were divided by the European powers into 5 political entities, British Somaliland, Italian Somaliland, French Somaliland (now Djibouti), the Haud Reserve area or Ogaden (now the Somali National Regional State of Ethiopia) and the British Northeast frontier district of Kenya.

The Republic of Somalia was created in 1960 by a union of the British and Italian territories a few days after they became independent. In 1969 following 9 years of relatively successful multi-party democracy, President Shermake was assassinated. A few months later the army chief, Siad Barre, staged a military coup and took power. Barre embarked on a programme of "scientific socialism" which included nationalisation of many of the countries industries. The strategic position of Somalia at the entrance to the Red Sea attracted support from the USSR, with whom it signed a treaty of friendship in 1974. The USSR helped Somalia to build one of the largest armies in sub-Saharan Africa. This army was used partly to suppress unrest within Somalia but also to further the dream of a greater Somalia; in 1977 Somalia attempted to annex the Ogaden region of Ethiopia, but this was unsuccessful partly because at this time the USSR switched its allegiance to Ethiopia. Large numbers of Somalis were displaced from the Ogaden during this short war.

Siad Barre's regime was not popular throughout Somalia. In 1978, the Somali Salvation Democratic Front (SSDF) launched a guerrilla campaign which resulted in years of repression in the northeast region by the (southern-based) government. In 1988, forces of the Somali National Front occupied the northern cities of Hargeisa and Burao. The Somali army destroyed Hargeisa and in the ensuing months, killed and displaced tens of thousands of civilians in the northwest region. Within 2 years the Siad Barre regime collapsed in the face of multiple clan-based civil wars and in 1991 Siad Barre finally fled from the capital Mogadishu. Much of the city was destroyed in the fighting. By this time there were an estimated 2 million refugees in Somalia and its neighbouring countries.

In 1991 leaders in the northwest declared the independent state of Somaliland, followed in 1998 by the formation of the non-secessionist state of Puntland in the northeast. Both authorities developed functional administrations bringing at least some peace and stability to their regions. During this time political authority in the southern regions was in the hands of clan-based warlords. A massive UN peace keeping operation from 1992-1995 failed to establish a national government, as did numerous attempts at reconciliation. In 2000 the Inter-government Authority on Development (IGAD) brokered the 13th peace conference which resulted in the formation of a Traditional National Assembly. However the authorities in Somaliland and Puntland (also several southern factions) did not participate in the process. The 14th conference started in 2002 has just resulted in the swearing in at the UN headquarters in Nairobi on 29/08/04 of a 275-seat Federal Transitional Parliament. The parliament is based in Nairobi because the Somali capital, Mogadishu, is still considered too dangerous. There is more optimism for the success of this peace effort because the newly elected president is from Puntland (Abdillahi Yusef) and the process has involved most of the clans and warlords of the southern region. However no one from Somaliland participated and it is obvious that, for the time being, Somaliland will continue to remain a separate political entity.

¹ extracted from: Edelsten, Penney, Schwartz (2004): Draft final report Framework Contract AMS/451 - EU support to Sheikh Technical Veterinary Training School (Somalia) – Study for a Project Financial and Economic Analysis (Including Risk Analysis and Probability Appraisal)

Geographical and demographic features

The Republic of Somalia (ROS) occupies much of the eastern part of the Horn of Africa, comprising 638,000 km² of arid and semi-arid rangelands. Much of the republic and adjacent lands inhabited by Somalis (the Somali ecosystem) lie on the East African plateau at an altitude of 1000-2000m. There are extensive foothills to the north sloping down to the coastal plain. The area is classified by FAO (2004) as 55% rangelands, 14% forest, 12% cultivatable and 19% other. In 1990, there were an estimated 45m HA of pasture and 8.2m HA of crops, of which 15% were irrigated.

Although small areas of high ground in the northwest have rainfall in excess of 500mm, the average is 100-200mm with 40-60 rain-days per year. Rainfall decreases progressively from west to east. It is bimodal, with the main (Gu) rains in April-June, and secondary (Dair) rains in October-November. The Gu may fail every 10 years or so, the Dair perhaps every 3 years.

The human population is estimated to be 6.4m (UNDP 2001), with an annual growth rate of 2.8%. Around 0.3m Somalis are internally displaced and a similar number are refugees in neighbouring countries. The northwest regions comprise a mixture of pastoralists and agro-pastoralists. The northeast regions are predominantly pastoral as are the adjacent regions in the south. The only genuine agricultural regions lie in the south between the Shebelle and Juba rivers, and here pastoralists are few. FAO (2004) estimate that 80%² of the population in Somalia is rural, with 55% pastoralists or agro-pastoralists, 24% crop farmers and 1% fishermen. FSAU (2000) gives similar figures (50-60% pastoralists plus 20% partially dependent on livestock). In 1990, agriculture contributed 65% of Gross Domestic Product (GDP) including the livestock sector which accounted for between 40-50%. FSAU (2002) estimate that the livestock sector provides 55% of the calorie intake of the population and 60% of their income.

In the northern regions livestock are the main source of food and income. Camels and small ruminants are the most important species. The population is heavily dependent on the livestock export trade³, the income from which pays for commodities such as rice, pasta, tea. The central regions and adjacent southern regions are the driest and the population is even more dependent on livestock than the northern regions. Browse is more consistent than grazing, camels and goats thrive better than sheep and there are few cattle. Migration is more extended and the lower density of wells has led in the past to seasonal clashes between clans. Livestock trade is to the north and south. In the southernmost regions, although pastoralists are less numerous, they are still important in the economy. The largest concentrations of cattle are found here and locally produced cereals are traded for milk. Livestock are traded to the capital, Mogadishu, east African countries and the Arabian Peninsula.

Livestock husbandry

The livestock system is predominantly pastoral, with local variations related in particular to climate, topography and water availability. Herd and flock sizes vary from many hundreds in the truly pastoral areas, to medium size (below 100) in the agro-pastoral zones. Camel (dromedaries) are often divided into large breeding herds, which move far from water in search of grazing (compared to small ruminants), and small groups used around semi-permanent homes for milk and pack. Sheep (uniformly the black-headed and fat-tailed "Persian" type) and goats (Galla and Boran type) are kept mainly for meat production, although milking goats (Benadir type) are found in some southern regions. Cattle are of the shorthorn-zebu type, but Ankole-and Boran-types are found along the borders with Ethiopia and Kenya, and such animals are regularly seen in markets on their way for export.

² The reference quotes 70% but the subsequent figures add up to 80%

Productivity is generally low compared to more fertile lands further south and west, with one parturition per year for small ruminants and one per two years for camels and cattle. Off-take varies according to market prices and the cash needs of the family. Farah (1985) quotes off-take rates of 2.3% for camels, 10.9% for cattle and 18.6% for small ruminants.

Migration patterns

During the dry season (jilal) livestock in the northern regions concentrate around permanent watering points on the plateau, cement water tanks (berked), shallow dams (balleh) and in the maritime foothills where light rains may fall. Up to 20% of the households from the Haud (which for the most part has no permanent water) may move into Somalia in search of water. During the rains families and stock disperse widely to traditional pastures throughout the Somali ecosystem, although an increasing number keep part of their herds or flocks at a semi-permanent home. In the central region, stock move large distances into the Gawaan plateau or coastal plain in the dry season. Livestock in the southern regions disperse during the rainy season but spend the dry season in the croplands feeding on crop residues and grassland.

In the past 50 years, traditional patterns of migration have been affected by a number of socio-economic and possibly climatic factors. Increased wealth accruing from the flourishing export trade and remittances from Somalis working abroad have led to the construction of numerous cement water tanks throughout the ecosystem. This has permitted herds and flocks to stay in areas lacking wells (e.g. the Haud) well into the dry season, where previously they would have moved back to permanent water sites. Illegal enclosing of land has favoured a few traders and businessmen at the expense of the many herders who relied on such sites for dry season grazing. Civil unrest has reduced the freedom of movement normally a feature of the larger clan groups, and it is now the family which has to fight for its rights to grazing and water. Although reliable data are hard to obtain, average rainfall may be decreasing. For a combination of reasons, some associated with the above factors, also the reduced offtake caused by periodic export bans, an increasing proportion of pastures are very depleted and unusable for grazing. This is not a new phenomenon, being referred to pre-independence by Mares (1954), "throughout the Ogo (plateau) soil erosion is progressing at an alarming rate, particularly around the wells" and "semi-permanent settlement is just starting to destroy ground-cover and produce erosion".⁴ More recently a declining feed base, range degradation, reduced mobility of herds through widespread unauthorised privatisation and enclosure of grazing land (Conze, P. and Laban, T. (1986); Shepherd, G. (1988); Schwartz, H.J. (1993); Sommerlatte, M. and Abdi Umar (2000) and Stockton, Gilles (2001) have been defined as the most important constraints to improved livestock productivity are, in that order of importance.

Livestock population

Accurate statistics for the livestock sector are as questionable as other parameters quoted above. It is obvious that data have been recycled from report to report and many fail to quote their source. The Somali Ministry of Livestock, Forestry and Range (MLFR) census of 1975 recorded 6m camels, 5m cattle, 12m sheep and 19m goats. Farah (1985) using MLFR census data reported an increase in the numbers of all species from 1975 to 1984, and an increase in Tropical Livestock Units (TLUs) from 12 to 14m. GTZ (1993) quote similar MLFR statistics. More recently the EC (1999) quoted figures (source not given) of 6.2m camels, 5.2m cattle, 13.5m sheep, and 12.5m goats. On the basis of body mass camels were most important (43% of the population total), followed by sheep and goats (35%) then cattle (24%).

FAO (2004), using FAO (1998) data, list the current population as 6.2m camels, 4.6m cattle and 31m sheep and goats, 41.8m head, 15m TLUs, and a density of 4.2HA/TLU.

⁴ Mares adds "previously every tribe had its own grazing ground maintained by might more than right. Now

None of the earlier reports quantify the considerable numbers of animals which move in both directions across international borders for grazing, or which are in transit from Ethiopia's Somali region (and to a lesser extent the Afar region and Djibouti) for export. However FAO (2004) does estimate the total numbers of livestock in the Somali ecosystem: 7m camels, 10m cattle, 40m sheep and goats, a total of 57m animals.

All recent publication on livestock numbers basically quote the same source dating back to figures from Department of Planning and Statistics, Mogadishu, 1989 which lists livestock populations by 5 zones (appendix 1). Although of questionable accuracy, they serve to illustrate zonal differences. They show a relatively even distribution of camels over all regions, 75% of the cattle in the southern regions, 80% of the sheep in the northern region. Goats, although more numerous in the northern and central regions, are also popular in the south.⁵ Although FAO (1998) states that there are 46,000 domestic equines in Somalia, the consultants think that the number could be as high as 1.5m.

Livestock trade

Livestock and livestock products have been exported from the Horn of Africa for many centuries, north to Arabia and south to Kenya and beyond. The British established a presence in Berbera in the 19th century to protect the supply of meat to their huge military garrison in Aden. The export trade was greatly stimulated in the middle of the 20th century by the increasing oil wealth of the Arab states. This accelerated the change of the economy from subsistence to a mixed one with trading of cereals and other commodities.

Annual export figures during 1980-1983 were in the range of cattle 54-157,000; camels 14-17,000; small ruminants 1.3-1.5m (Farah 1985) (appendix 2). Animals were exported to the Arab states mainly via the northern port of Berbera and the southern ports of Mogadishu and Kisimayo, with peak exports at the time of the Haj and Eid festivals. In 1983, the Kingdom of Saudi Arabia (KSA) banned imports of cattle from the Horn due to an outbreak of Rinderpest and cattle exports dropped to 54,000.⁶

The same source shows that the number of animals for domestic consumption (all species) was several times the number exported, at around 0.4m cattle, 0.13m camels and 4m sheep and goats annually (Appendix 2).

During the civil war years, data are poor but it is known that exports diverted to smaller ports controlled by local clan power groups, especially Bosasso in the northeast of the country. From 1997 to 1999, KSA imposed a ban on the importation of livestock from the Horn due to an outbreak of Rift valley fever (RVF).⁷ This had a profound impact on the volume of exports. The Somaliland Chamber of Commerce (1999) reported that sheep and goat exports dropped from 2.5m in 1997 to 0.8m in 1998. The ban was initially enforced by all the Arab states but was then lifted by the Sultanate of Oman and United Arab Emirates and there is circumstantial evidence that animals from the Horn continued to be imported into KSA via other Arab states. Thus exports recovered relatively quickly with figures of 3.1m sheep and goats, 71,000 cattle and 58,000 camels recorded for the northern ports of Berbera and Bossasso in 1999. Not unnaturally the shortfall in imports in the Arab states was quickly filled by other exporting countries such as Australia, and Middle East and Asian countries.

The ban was re-imposed in 2000 when RVF broke out again in the Horn and, although there have been reports of the ban being lifted in 2004, there has been no official notification by the KSA authorities to government or related institutions in the countries of

⁵ FAO (2004) table 3 quotes 0.37m goats in the central region. This is an error in transposing data from the original source. The error has also made the column totals wrong.

⁶ This ban has never been lifted officially, although it has not been adhered to in recent years.

⁷ Due to the risk of transmission of virus during ritual slaughter of infected animals. Large numbers of

the Horn.⁸ In 2002 exports were 57% and 52% of the pre-ban levels for small ruminants and camels respectively and cattle exports were 27% higher (FAO 2004)(Appendix 3). Despite the partial recovery in volume of trade, the price for animals has remained low, local traders during our mission quoting current figures of US\$30 compared to US\$70-80 a few years ago. FSAU (2002) report that 65% of the livestock sold in northeast Kenya come from Somalia.

Today an increasing number of live animals, warm carcasses and chilled carcasses are being flown directly to Arabia and further afield, from slaughterhouses in Mogadishu, Galkaio and Belet Weyn, avoiding some of the risks and uncontrolled taxes associated with civil unrest. A custom-built export slaughterhouse including chiller has recently been commissioned in Burao with a capacity of 750 sheep and goats per day.⁹ FSAU (2002) estimates that around 0.5m carcasses were exported in 2002. Exports of hides and skins, especially of young goats, are still significant.

Animal health

Somali livestock are well adapted to their harsh environment and the herders are skilled at finding scarce feed resources. The herders are also aware of the nature of many health risks and adopt appropriate husbandry to minimise health problems e.g. avoiding herds known to be suffering a contagious disease.

Epizootic diseases such as Rinderpest and contagious bovine pleuropneumonia were recorded regularly by the colonial administrations and more sporadically in the 1970s, when mass vaccinations were operating across Africa (the JP15 campaign). Rinderpest has not been recorded in the northern regions since the 1980s and it is likely that vaccination combined with the relatively low cattle density has led to its eradication from there. In contrast the southern region experienced epidemics in the early 1980s and early 90s when Rinderpest spread north from Kenya. Acute Rinderpest has not been seen since that time, presumably due to the efforts of the Pan African Rinderpest vaccination Campaign (PARC). However there is good evidence that mild strains of Rinderpest (lineage 2 virus)¹⁰ are still circulating in the southern regions, which has significant implications for cattle trade (PACE 2003). With the apparent eradication of Rinderpest from Asia and from the only other residual focus in Africa (namely the south of Sudan-Ethiopia), the southern Somali-northern Kenya cattle population may be the last remaining reservoir of Rinderpest in the world.

Contagious bovine pleuropneumonia (CBPP) is a more insidious disease than Rinderpest. It is highly likely that it is still endemic in the cattle population of the Somali ecosystem, especially where cattle density is high, possibly absent from areas where density is low. Contagious caprine pleuropneumonia has been reported from all regions over the years and it can also be assumed to be endemic wherever goats are found in reasonable numbers.

Foot and mouth disease has been recorded in the past but not recently. It is usually mild in the indigenous ruminant population and the herders do not fear it like the above mentioned diseases. It is likely that serotypes A, O and one or two SAT serotypes are circulating in the cattle population.

Peste des petits ruminants (PPR) is believed to have spread into the Somali sheep and goat population in the late 1990s (as part of a spread from west to east Africa over the past 20-30 years). It is potentially a serious disease, although accurate morbidity and mortality data for Somali breeds are not available.

⁸ ISID (2004) reported that the movement restrictions applied to affected districts within KSA had been lifted.

⁹ This facility is not yet in operation although it has had a "dry run". Planned export is 15 tons every 2 days.

Other contagious diseases have been recorded in Somali livestock by different investigation teams. Surveys indicate low prevalence of infection of bovine tuberculosis, bovine brucellosis (*Brucella abortus*) and *Br. melitensis* in sheep and goats. The risk of infection for humans is unknown, but likely to be low due to the low incidence of clinical disease in the livestock and the fact that meat is always well cooked before consumption and much of the milk is consumed in tea which is well boiled. However GTZ (1993) reported that raw goats milk is drunk in the central region, and the risk to man could be higher there.

Anthrax has been reported sporadically throughout Somalia, affecting ruminants, camels and equines. It is usually acute and associated with high mortality in ruminants but subacute in equines. It is often chronic in camels, many of which recover. The herders and butchers sometimes become infected, usually resulting in cutaneous anthrax for which case mortality is low. Blackleg, another soil-borne infection, occurs sporadically. Vaccines produced by the Serum and Vaccine Institute, Mogadishu were used to control the diseases in the 60s and 70s.

Many vector-borne diseases have been recorded in Somali livestock, but few have been associated with clinical disease and mortality. Clinical cases of Rift Valley fever (RVF) were reported in the southern-most regions of Somalia, representing the northern end of an epidemic which occurred throughout east Africa in 1997/8. Cases were reported again in 2000. Most of Somalia is an unsuitable habitat for the vector of RVF, *Aedes macintoshii*. It is likely that the infection is endemic in the far south of the country in the form of infected mosquito eggs.¹¹ In arid and semi-arid zones, outbreaks of RVF only occur when rainfall is sufficient in volume and duration to allow several cycles of mosquito-domestic animal infection to occur. Davies (1998) predicts that epidemics in Somalia are likely to occur every 15-35 years. However as there is no carrier state, infection does not persist in the livestock population after an epidemic finishes.¹²

Sheep and goat pox has been recorded regularly in the northern regions over the years, and causes high mortality in some herds. It is likely that the infection is endemic throughout the Somali ecosystem, maintained by the large population and big herd sizes. Nairobi sheep disease was the cause of exceptionally high mortality in sheep and goat flocks throughout the northern regions in the early 1970s (Edelsten 1975). There are no reliable data about the disease since then, although typical disease was seen in live animals and post mortem by one of the consultants west of Hargeisa in 2000.

Trypanosomiasis¹³ is endemic and widespread in the camel population and is undoubtedly the most serious infection of this species. The herders are adept at spotting infected animals early in the course of infection and go to great lengths to obtain modern medicine to treat them. Re-infection is common however, with animals apparently developing little resistance to the parasite. Thus the disease is a significant cause of morbidity and mortality. Tsetse-transmitted trypanosomiasis occurs only in the riverine areas of the southern region, where it is endemic in the cattle population, and to a lesser extent other livestock species.

Camel pox has been recorded in different regions of Somalia, but clinical disease is usually restricted to young stock.

Parasitic gastroenteritis is surprisingly common given the arid nature of the environment. Cattle and camel calves may have significant burdens of ascarids or other nematodes, but adult infections are rarely serious. In contrast, clinical cases are recorded in all ages of

¹¹ Eggs are laid at the edge of low lying areas which may be inundated once in many years e.g. 10-30 years), but the virus can survive over this period.

¹² Although investigation of RVF has been hampered by the reluctance of the Somali authorities to release results of serological tests, enough is known about the disease epidemiology to support this analysis

sheep and goats, and many carry small but potentially pathogenic burdens (especially *Haemonchus* spp.) throughout the year. Infective larvae are picked up whenever animals linger on pastures more than 4-6 weeks (an increasingly common practice). Significant numbers of larvae can be ingested from areas around watering points where faecal contamination is high and there is sufficient moisture to ensure larval survival.

Rabies was frequently reported in the colonial times but appeared to be of decreasing incidence in the 1970s, probably because the wild carnivore population had been decimated through hunting and the widespread practice of the veterinary department, to bait carcasses with strychnine in areas where rabies had been reported. There are no recent data on its incidence but it can be presumed that it is still endemic throughout the country.

Veterinary services up to 1991

Veterinary services in Somalia, until the civil war, were provided by the government. The organisation was typical of that established by colonial administrations throughout Africa, with a clear vertical line of command from director and senior veterinarians in the capital city to regional veterinary officers based in cities. These staff carried out mainly administrative and supervisory activities, including organisation of mass vaccination campaigns against Rinderpest and CBPP, and regulatory duties at the ports.

Veterinary assistants¹⁴ based at clinics near livestock centres such as larger markets and watering points carried out the field work including vaccinations,¹⁵ treatment of sick animals ("first aid"), which was very limited by mobility, preventive medicine such as tick control and dosing against helminths, and regulatory duties such as meat inspection and movement controls at markets and ports.

The numbers employed are shown in Table 1. The number rose dramatically over this period, absorbing most of the output from the veterinary faculty and the Animal Health Assistants Training School in Mogadishu. However although this workforce looks sizeable, few of the personnel had even the most basic resources needed to provide the services required and, apart from the regulatory work mentioned above, only reached out into the livestock population during the mass vaccination campaigns. In particular disease surveillance was minimal.

Table 1 Pre-war veterinary human resources in Somalia

Vets	Vet. Assistants (VAs)	Animal health auxiliaries	VA:Vet ratio	Source
378	1633	100	4.3	FAO (1992)
215	856		4.0	Farah (1985) from MLFR (1982)

Supporting institutions included the Serum and Vaccine Institute in Mogadishu which also had a role as the central veterinary investigation laboratory, regional laboratories with rather basic facilities at Hargeisa and Burao in the north, Kisimayo in the south and Belet Wen in the centre.

An intermediate-level technical training school¹⁶ for Animal Health Assistants (AHAs) was established in Mogadishu in 1969. Farah (1985) reported its output in the years 1980-1983 as 114, 110, 75 and 60. A faculty of Veterinary Science was inaugurated in 1973 and its total output for the period 1978-1984 was 215 veterinarians and 117 animal production scientists, annual means of 27 and 20 respectively. An agricultural secondary school started in Afgoye in 1974, and was expanded to include a Department of Livestock,

¹⁴ Veterinary assistant is a "para-professional", the term now used to describe a person who has had 2-3 years of intermediate level training leading to a diploma. An animal health auxiliary has had much less training.

¹⁵ e.g. in addition to Rinderpest and CBPP, anthrax, blackleg, haemorrhagic septicaemia and rabies.

Forestry and Range. It offered a 3-4 year certificate course for primary school leavers. The Range Training school in Burao offered a 2 year course for primary school leavers.

In this period various donor-funded projects carried out research and trials concerning the health and productivity of livestock and use of the range. These included the British Veterinary Team in the northern regions from 1969-1972 (Edelsten 1994) and the World Bank Central Rangelands Development Project (CRDP) from 1980-1989. GTZ was responsible for the veterinary component of the latter, starting in 1982 and finishing in 1989 when it became unsafe to continue (Baumann et al 1993).

An important innovation of the CRDP was the use of nomadic animal health auxiliaries (NAHAs), initially to help with data collection and subsequently to transfer knowledge arising from the project to the herders. They were also trained to carry out basic veterinary interventions such as "first aid" and de-worming. The NAHA system was the first primary health care system to operate under pastoral conditions, and it highlighted the usefulness of members of the community in epidemic disease surveillance.

Veterinary services since 1991

By the end of the 1980s when civil order collapsed, development projects were replaced by emergency projects financed by the international community¹⁷ and implemented by a plethora of INGOs¹⁸ and rapidly formed local NGOs. Common activities were training of staff and CAHWs at different levels, vaccination programmes and disease surveillance. The most consistent inputs have been provided by the Italian NGOs Terra Nova and UNA and Vetaid UK (appendix 3).

In 1994 the Somali Aid Coordination Body (SACB) was established to address the problem of poor coordination between projects. Based in Nairobi, it aims to provide a framework for a common and coordinated approach to the delivery of aid to Somalia. All major donors, UN agencies and INGOs are encouraged to participate and this appears to have been relatively successful. One of its 5 committees is the Food Security and Rural Development Committee, within which is the Livestock sub-committee.

The EC through its European Commission Somali Operations unit has been a major donor for Somalia since 1995. Expected results for its Livestock Sector Strategy (1999) include:-

- Private animal health delivery systems responding to services required by livestock owners and traders,
- Rinderpest eradicated in Somalia,
- Epidemic surveillance network for main animal diseases established in collaboration with local administrations and made operational on international recognised standards at least in the northwest,
- Diversification and expansion of regional and extra-regional trade and marketing of live animals and livestock products has enhanced off-take of livestock within the regional production system.

The World Bank supported the Somali economy in the decades following independence but stopped investing during the civil unrest. Recently under its LICUS¹⁹ initiative, the Bank aims to provide more proactive and effective support, through partnerships, to countries with weak policies, institutions and governance. Somalia is recognised as being at the extreme end of the LICUS-defined continuum of countries, one of the poorest in the world and without a functioning government for over a decade. In support of reconciliation

¹⁷ IFAD, UNOSOM, UNHCR, FAO/UNDP, EU/ECHO, GTZ, DfID, USAID, Italian and Swiss governments, Islamic Bank

¹⁸ IRC CARE Oxfam PACE

initiatives, the UNDP and WB produced a Country Reengagement Note (CRN) for Somalia (UNDP/WB 2003). Their 3-point strategy seeks to:-

- provide public goods with a strong regional dimension, with positive spillover effects for neighbouring countries (a useful point when considering the ecosystem),
- focus on interventions which are not likely to be reversed in the event of instability e.g. knowledge intensive investments aimed at capacity and institution building,
- emphasise income generation through support to the private sector in the livestock sector.

One of its entry points is to create an enabling environment for the livestock and meat industry through:-

- establishment of a certification board for livestock and livestock products (the FAO EXELEX project is addressing this – see below),
- elaboration of a livestock strategy (its review was published in January 2004),
- improve capacity for diagnosis and disease control,²⁰
- establish a centre of training for livestock health and research.²¹

The Export and Certification of Livestock for Export (EXELEX) project is co-financed by the Italian government and implemented by FAO. It started in 2003 and its objective is to develop a veterinary certification system for livestock export from all parts of the Somali ecosystem. At present it is looking at the feasibility of implementing a “rolling quarantine” of 21 days duration, starting with identification and inspection of stock near the place of origin, a second inspection plus brucellosis testing (of small ruminants) around 14 days later and a third inspection and certification at the port of embarkation.

The Pan-African programme for the Control of Epizootics (PACE) is the successor to PARC which had been co-financed by the EU since 1986. PACE's 1999-2004 programme covers 32 sub-Saharan Africa (SSA) countries. It is coordinated by the African Union Inter African Bureau of Animal Resources (AU IBAR).²² The driving force behind PACE is still the eradication of Rinderpest from the African continent, in support of the FAO-coordinated Global Rinderpest Eradication Programme (GREP). Its specific objectives are:-

- to strengthen national and regional capabilities to assess the technical and economic aspects of animal diseases, and to generate appropriate programmes for their control,
- to safeguard animal health in Africa against major epizootic diseases.

The project purpose for the Somali programme (2000-2004) states “livestock owners, traders, public health and private animal health workers cooperate to combat major livestock diseases”. Expected outputs are:-

- capabilities of public sector AHWs to regulate, coordinate, monitor and evaluate the livestock sector development sector are strengthened,
- capabilities of private AHWs to engage in curative and preventive services enhanced,
- livestock disease surveillance system is functioning,

²⁰ consisting of consultants fees, training, equipment, estimated budget US\$414,000.

²¹ details of location, size, level of education are not given, but the estimated budget of US\$700,000 specifies consultants, meetings and supporting facilities.

²² The budget for establishing common services such as coordination and management amount to €19m and

- emergency preparedness and response systems are functional
- local networks for promoting livestock health are functioning,
- programme is effectively coordinated.

PACE activities in Somalia (2001-2003) have included clinical and serological surveillance and vaccination campaigns for Rinderpest, the training and use of veterinarians²³ and community-based animal health auxiliaries. Traders and livestock owners have been used successfully to for sero-surveillance (blood sampling) and vaccination in southern Somalia where it has been too unsafe for outsiders to work. PACE is also focussing on capacity building, for example running workshops in the central and southern regions for different stakeholders in the livestock sector, including representatives of the livestock professional associations. A new phase of PACE Somalia began in December 2003.

CAPE, the Community Animal health and Participatory Epidemiology Unit,²⁴ works closely with PACE. "It links field experience with stakeholder dialogue, to create enabling policy and institutional settings for community based animal health services." It helps government and NGOs to implement animal health care projects according to codes of conduct and actively promotes the role of CAHWs in gathering surveillance data on epizootic diseases.

The AU IBAR with USAID is promoting dialogue between Somalia and the Middle East through the Red Sea Livestock and Trade Commission, which brings together traders and key government personnel on both sides of the Red Sea.²⁵ It is a private sector organisation whose goal is to ensure disease free trade in livestock and livestock products between the Horn and the Middle East. It promotes harmonisation of trade, quality assurance, public-private partnerships, reform of legal and policy frameworks, capacity building through livestock trade associations and persuading authorities to focus on their supervisory and regulatory roles. The AU IBAR (USAID) Pastoral Livelihoods project also promotes traders organisations.

The current situation of veterinary services

Despite the absence of a recognised government in Somalia since 1991, at the level of the internal markets, trade routes and ports, some semblance of regulatory activity has continued to the present day. Animals undergo a (sometimes cursory) clinical inspection at the big markets such as Toog Wajaale (animals coming from Ethiopia's Somali region) and Burao (the biggest livestock market in the country). In addition to clinical inspection, at the request of importing countries, small ruminants are blood-tested for brucellosis at holding grounds pre-export. Certificates are usually accepted by the importing countries, although on occasions, boat-loads of animals are rejected on health grounds, sometimes without reasons given.

In Somaliland, a Ministry of Livestock was established in 1993. In recognition of a global trend in liberalisation of markets and privatisation of public services, it commissioned a "Guidelines on Private Veterinary Services in Somaliland (1996)". This is a good attempt to define the functions which could be transferred to the private sector and how they would be regulated, especially with regard to certifying the health of livestock in the export trade. It also defined in some detail the qualifications and responsibilities of different cadres, including veterinarians, animal health diplomats, auxiliaries and pharmacists. In 2002 MoL issued a National Veterinary Code which includes many of the recommendations of the Office International des Epizooties (OIE) concerning disease notification, certification of exports, privatisation and delivery of veterinary services.

In 2004 the government veterinary services in Somaliland comprise 22 veterinarians and 36 intermediate level AHAs (MLFR – personal communication). They are based in the

²³e.g. the Itinerant Training Programme delivered by Terra Nuova in the southern region

²⁴ CAPE is funded by DFID and is based alongside PACE in Nairobi

regional capitals and at the ports, carrying out the essential regulatory and administrative duties, concerning the movement of animals, testing and certification for the export trade. A similar number of personnel are working for veterinary associations, doing clinical examinations and blood testing for the export trade. A few are working for NGOs, carrying out disease surveillance, vaccinations, extension and training. Many have received training in the topics mentioned above, also in drug use and marketing and management of small businesses.

In addition there are an estimated 295 CAHWs in Somaliland, who have been trained and equipped to provide basic services in their home areas. This includes treatment for the common ailments ("first aid"), prophylaxis for internal and external parasites and infections, disease surveillance and extension. Some CAHWs are working under the supervision of veterinary associations (more in spirit than a genuine mutually supportive capacity), others are independent. There is little quantitative data on the impact they are having on the health and economics of the livestock population, however they are highly valued as a source of epidemiological information and potential for early warning of epizootic diseases. Drugs are widely available in the market place but there is no control over importation, sale and use.

In Puntland services were strengthened by an EC UNA project (1998-2001), including:-

- training of animal health professionals for private practice related to livestock export and general veterinary services,
- establishment of a livestock export certification system,
- establish a port veterinary office,
- assist the development of a veterinary practitioners association (PULPA),
- establish a laboratory to oversee brucellosis testing.

In 2003, the Puntland Ministry of Livestock enacted a Veterinary Law Code similar to the one referred to for Somaliland above.

The Somali Livestock Professional Forum (SLPF), the United Livestock professional Forum (ULPA) and Puntland United Livestock Professional Forum (PULPA) are examples of local interest groups through which trained personnel are attempting to engage with donor organisations. SLPF²⁶ claims to have representatives throughout Somalia but this is disputed by ULPA. ULPA operates in the northwest representing 8 veterinary associations and 63 people. PULPA covers the northeast, and according to Gilles (2001) represents 70 people including NAHAs who work in 17 teams doing clinical work and brucellosis testing; an additional 18 veterinarians and veterinary assistants work at the port veterinary office and abattoirs at Galkaio and Bossasso.

Data for the other regions of Somalia were not available. However the chairman of ULPA said there could be as many as 400-500 para-professionals in the whole of Somalia.

CONTEXT ANALYSIS

In 2004, Somalia is on the brink of advancing to another level of political stability. Clan warfare is at its lowest level in the south of the country for many years. A transitional government has been recently sworn in and, although based in Nairobi, has the backing of most of the clans in the southern, central and northeast regions. Although it still aspires to nation status, Somaliland has not been recognised by the international community, nor is it likely to be. However it has had many years of stability and, despite the murders of 4 expatriate aid workers in the past 2 years, security is relatively good.

The livestock sector despite many setbacks has proved its resilience. It appears able to retain saleable stock when market prices are unfavourable and resumes sales when

matters improve. However the short-term effects on livelihoods are potentially serious when this happens and there may be undesirable effects on the range due to overstocking. The export trade remains vulnerable to a variety of factors, especially bans imposed by the Arab states (the most lucrative markets) because of the risks of epizootic diseases and manipulation of trade volume and prices by numerous middle-men, invariably against the interests of the producers. At the same time there is an increasing perception that exports of livestock and livestock products will be compromised by the poor quality and transparency of surveillance and control for epizootic diseases. A host of projects have addressed these and related issues, supporting dialogue between the different stakeholders in the export trade, building up infrastructure at the ports, capacity building at institutional level and training. Much effort has been directed towards Rinderpest control (detecting infected herds and vaccination), because southern Somalia-northern Kenya may be the last remaining focus of the disease in the world. Because the goal of global eradication is tantalisingly close, and because of the continued weakness of the administrative structures in the region, it can be assumed that donor support for Rinderpest eradication will continue until the goal is achieved.

RVF epizootics will continue to occur in the semi-arid zone of east Africa at prolonged intervals. Until recently, it was assumed that RVF outbreaks in Arabia were caused by importation of livestock incubating the infection, although it is possible that infection is also introduced by mosquitoes carried across the 70km wide Gulf of Aden. However it is evident that infection is now established in KSA and they are instigating measures to deal with this new situation. The epidemiology of the disease is complex and until recently it has been easy for countries to ban imports because of difficulties in estimating the risk of spread. However with better understanding of RVF and the help of satellite data/GIS, risk management can be tailored more precisely e.g. allowing exports to continue from zones in the ecosystem which are low risk, lifting bans 1-2 months after the rains stop and clinical cases have stopped appearing, allowing movement of vaccinated animals. The OIE has altered its recommendations in support of this approach (OIE 2003) and the WTO SPS regulations, which are based largely on OIE recommendations, should also be used more effectively, to the benefit of all stakeholders in the Somali export trade.

Types of veterinary inputs required by the livestock sector

A. The need to control epizootic diseases and certify the health and safety of livestock and livestock products for export is the most pressing one. This comprises not only the more obvious vaccination campaigns, movement controls of livestock and inspection of animals pre-export, but also provision of information on a) the status of epizootic diseases in the Somali ecosystem through surveillance and b) control measures in force, to the satisfaction of trading countries and countries which are vulnerable by contiguity. These are the basic requirements for any country with a significant export trade. This sort of work can be delivered by relatively few veterinarians supported by a cadre of para-professionals (animal health inspectors), linked to an extensive network of CAHWs.

B. Another important function of veterinary services is to protect the public in Somalia and trading countries from zoonotic diseases, through control of infections in livestock and safe handling of animal products. The threat from zoonotic diseases is not high in Somalia, infections such as anthrax, brucellosis, tuberculosis and rabies being of low prevalence. These diseases can be contained in the few and localised situations where incidence is high enough to warrant it²⁷, anthrax, brucellosis and rabies by vaccination and other sanitary measures, tuberculosis by condemnation of infected meat at meat inspection and test and slaughter of reactors. The growing trade in carcasses for export requires a level of meat inspection and hygiene which is technically not difficult to attain. An increase in demand for meat products for export and home consumption will require more sophisticated levels of hygiene along the food chain and accompanying inspection

²⁷ Containment infers maintaining incidence at a low level as opposed to the more difficult tasks of reducing

and regulation. However this increase will probably be relatively slow and restricted to a few abattoirs/processing plants. Inputs can be supplied mainly by paraprofessionals, namely animal health and meat inspectors, as long as there is supervision from veterinarians.

C. The third type of activity focuses on more general problems which affect productivity, off-take and the economics of production, including nutrition, endemic diseases and management. The term "husbandry-related disease" is used when animals are clinically ill, however these problems are often sub-clinical, manifesting for example as poor reproductive performance or poor growth. Veterinary inputs aim to optimise production in a sustainable way, to maximise income for stock owners and thereby improve livelihoods. Activities include treatment of sick animals, preventive medicine, provision of advice on husbandry and extension. CAHWs can be trained to recognise and some of the common conditions, but maintaining a drug supply can be difficult under Somali conditions and treatment uneconomic in certain situations. Preventive medicine inputs can be economic if the problem has been assessed properly and the drugs supply sustainable e.g. control of helminths and ectoparasites. CAHWs with support from para-professionals (especially where vaccines are concerned) can carry out these activities, to the mutual benefit of herder and service provider. Again, some overall supervision is required by veterinarians.

D. Other health problems and constraints on productivity can vary greatly between situations and assessment requires sophisticated analysis and understanding, usually necessitating the input of veterinarians and other graduate scientists. It is hard to envisage that such analyses can be provided at the herd level in Somalia in the medium term, apart from the few areas where commercial livestock production might develop.²⁸ However there is certainly a need for assessment of the most likely factors to limit off-take from the range, such as nutrition, and to develop appropriate strategies as problems are elucidated. This requires the inputs of graduate staff skilled in agronomy, animal husbandry, animal health and veterinary epidemiology, in which areas Somalia will need external assistance for the foreseeable future.

Although activities under A. and B. above are "for the public good" and by nature regulatory, inputs at field level can be delivered by the private sector, with governments inputs in the form of overall supervision and administration.

Activities under C. are "for the private good" and inputs can be provided by the private sector. The government role lies in maintaining welfare standards and standards of practice e.g. certification, licensing and registering practitioners at all levels, training standards, control on the importation and use of drugs and vaccines.

In the past 2 decades veterinary services in Somalia have evolved, partly by default but latterly with support from donors, to a system broadly in line with what is described above. The trends have been similar to those seen in other countries with extensive livestock rearing:-

- greater involvement of the private sector,
- recognition of the role of para-professionals in delivering some of the services previously assigned only to professionals (veterinarians),
- recognition of the value (and indispensability) of CAHWs in surveillance and provision of clinical services,
- putting in place appropriate institutional structures to facilitate the above trends.

²⁸ In the medium term it is unlikely that professional or even para-professionals will be able to provide services more than a radius of about 20km from the towns where they are based, for both logistical and economic reasons. The industry must therefore continue to rely on CAHWs for the bulk of the clinical and

The profile of the veterinary services is a mixture of the models described by Woodford (2004), in which the work at herd level is carried out by CAHWs, with para-professionals and veterinarians acting in advisory, supervisory and administrative capacities.²⁹ It is appropriate for pastoral systems such as in Somalia, where a combination of technical and logistical difficulties, coupled with the reluctance of stockowners to invest cash on interventions, greatly limits the sophistication of veterinary inputs. Because much of the work is regulatory, it is necessary that some of the veterinarians are government employees, for example in central administration and at regional level. Most of the para-professionals can be employed by the private sector, within companies, veterinary associations or as individuals. CAHWs likewise can be independent or employed by organisations such as veterinary practices, associations, cooperatives. It is important that private practitioners at all levels are rewarded by one means or another for regulatory work including disease surveillance. However, as mentioned already, all para-professionals and CAHWs require some level of supervision by veterinarians.

Somali authorities have worked steadily to improve the situation with the support of the many donors, but sustainability of regulatory inputs is dependent on the government recognising the importance of these activities and providing adequate funds to maintain them. An obvious source of funds is the revenue raised from taxation at different markets and export points.

It is at this point in time, with political stability increasing, that the feasibility of longer term initiatives look attractive. UNDP/WB (2003) recognises this in its livestock sector strategy, although still cautious. It states that such a strategy would normally be founded on a policy for the agricultural sector as a whole, but in the absence of a state government, the strategy should in the medium term be problem rather than policy driven. Despite this caution it is advocating activities and investments which will not necessarily yield short-term results.

With this background the need for investment in training for the veterinary services has come to the fore. All the professional and para-professional staff are over 35 years old, there has been no training for 15 years and there are no secondary nor tertiary institutions providing training in agriculture nor animal health and production.³⁰ There has also been no laboratory diagnostic service and little systematic investigation of animal health problems since the projects of the 1980s.

Quantitative manpower requirements

One way of making crude estimates of veterinary manpower is the one quoted in de Haan (1985). It recommends for regulatory work in extensive systems ratios of one veterinarian per 240,000 VLUs³¹ and one veterinary assistant per 12,500 VLUs. With an estimated livestock population of 15.7m VLU, this suggests a Somali work force of 65 veterinarians and 1256 para-veterinarians.

In practice numbers of personnel are often determined by the administrative structure of a country, for example the need to have a veterinary officer in each region and district. Using the old administrative boundaries in Somalia, this equals a work force of 18 RVOs and around 90 DVOs, a total of 108 veterinarians and a ratio of one veterinarian per 145,370 VLU.

De Haan (1985) quotes an FAO figure of one veterinarian per 30,000 VLUs for preventive work and treatments in extensive systems, but himself recommends a minimum of one

²⁹ Profiles include government vet/private paravet/CAHW, private vet/private paravet/CAHW, private paravet/CAHW.

³⁰ The University of Hargeisa runs degree courses in Business, Science and Law, and a partial course towards a degree in Human Medicine.

³¹ De Haan (1987) Veterinary Livestock Unit = a unit calculated to reflect the AH care required for different animal species. Values for livestock species: Cattle and camels 1.0. Sheep and goats 0.1. Pigs and equines

per 50,000 VLU. This would mean a work force of between 314-523 veterinarians for Somalia.

In the present day, however, and in line with recent trends, it is more appropriate to focus on para-veterinarians and CAHWs as the main service providers at field level. Using TLUs and staff numbers quoted by Ademessu (2002), ratios in pastoral areas of Ethiopia were one para-professional per 11,640 TLU and one CAHW per 2224 TLU.³² Ethiopia has long experience of community work which has been quite successful. These ratios are relevant to the Somali situation. Using these ratios, Somalia with its 15m TLU would require 1289 para-professionals and 6745 CAHWs, for regulatory and non-regulatory activities.

In the semi-arid district of Mwingi, Kenya, 3 veterinarians, 15 para-veterinarians and 100 CAHW serviced a population of 242,400 VLU, giving ratios of one vet per 80,800 VLU, one paraprofessional per 16,160 VLU and one CAHW per 2424 VLU(PACE 2003). To emulate these ratios in Somalia would require 194 vets, 971 para-professionals and 6477 CAHWs, figures similar to the ones above in Ethiopia.

Although these are crude estimates, they give an idea of the manning levels Somalia should aspire to. Estimates can be refined to regional, even district level if there are differences in stock husbandry and the type of service required. Catley (personal communication) stresses the need to take a market-orientated approach, in effect looking at each area on its merits, to see how many CAHWs and supervisory personnel it might support. Factors such as livestock density, hence distances to be travelled, must be brought into equations as the sophistication of the analysis increases.

Training needs

Community Animal Health Workers

Based on crude estimates of existing numbers of CAHWs and estimated requirements, Somalia needs greatly increased numbers of CAHWs. The case for CAHWs has been made convincingly by different organisations working in pastoral societies over the past 2 decades, with the proviso that they are adequately supervised and supported. The proportion of the livestock population currently served by CAHWs is not accurately known but is clearly a small fraction of the whole. Estimates for providing cover nationwide and the implications for training need to be made. Somalia has extensive experience of training CAHWs and has much of the human capacity to meet the demand for future training. Accommodation can usually be provided at local level, teaching materials are already available and can be replicated, some equipment and consumables may need to be imported. Donor support may need to continue in the short-term.

Para-professionals

The number of para-professionals currently in Somalia is not known, although from data mentioned above, it is probably 10-20% of the work force needed for the different services described earlier. The first priority is the regulatory component of the services. Assuming that veterinarians will fill posts at headquarters level and RVO level, a target of 90 para-professionals at DVO level, 20 at the ports and 15 at export abattoirs is reasonable i.e. total of 125. Assuming that the current workforce has a maximum working life of 10 years, there is a need to recruit 125 para-professionals for regulatory services during the next 10 years.³³ In the longer term, a workforce of between 900 and 1200 para-professionals is needed to cover both regulatory and non-regulatory work.

Training of para-professionals for the Somali livestock sector is a challenging task. In the field they need a set of basic but practical skills. They will often have to work with minimum supervision yet be expected to maintain certain standards. They may have to

³² Although TLUs are slightly different to VLUs, given the poor quality of population statistics, the discrepancy is insignificant in this discussion.

supervise CAHWs and personnel working for traders and in the food industry. They need to understand the nature of the problems they are working with and take initiatives on occasions. This requires knowledge-based learning, not just vocational skills. Conversely there are many external factors which will limit the effectiveness of their work and it is unwise to think that they will be able to utilise skills at a level seen in other countries. A balance has to be struck, based on sound analyses of the requirements of the livestock trade and public health, using hazard analysis and critical control point methodology in the field, abattoirs and processing plants, appropriate for the Somali situation. As the trade in meat products becomes more sophisticated (a medium to long term trend), training needs will need to be reassessed.

The intake for diploma courses for veterinary para-professionals in most developing countries is secondary school leavers. The courses run for 2-4 years, shorter for vocational training, longer for those who may have management responsibilities. In some countries, vocational training, e.g. a 2 year certificate course, is available to primary school leavers. There are potentially sufficient secondary school leavers in Somalia to enrol on a diploma course, and, although their standard is low at present, it is improving. There would be little incentive for foreign para-professionals to work in Somalia, even if the security situation continues to improve, given the language and other cultural barriers to overcome and the potentially Spartan working and living conditions.

Training of Somali secondary school leavers in foreign countries is feasible but with few obvious advantages. Somalis may not satisfy the increasingly high standards required for entrance to foreign institutions. Foreign schools cater for personnel who will work in mixed farming systems and much of the training inappropriate for the Somali livestock sector.

Conversely there are many advantages in developing intermediate level training facilities in Somalia; a course appropriate for the unique Somali ecosystem, no language problems, cheaper accommodation for students (with relatives), less travelling expenses. There are also many other economic benefits associated with a local institution.

Veterinarians

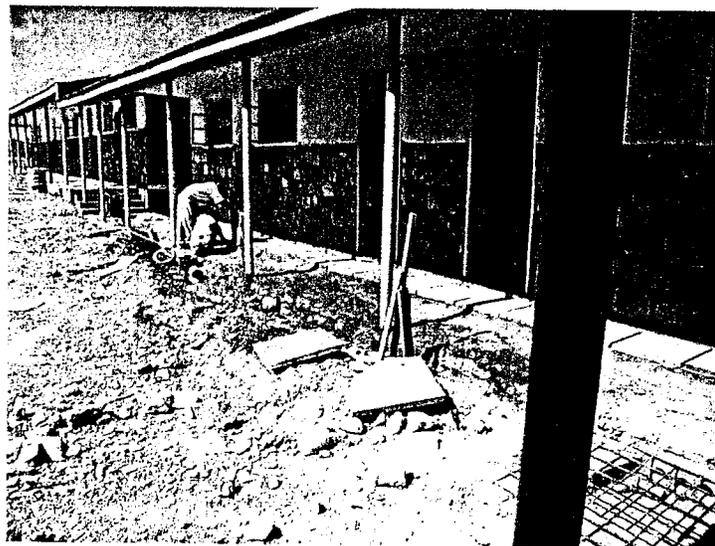
It is debatable how many new veterinarians Somalia needs in the near future, given some of the figures quoted above, although the need for further up-grading of existing staff is clear. The main priority now is to give existing staff the tools to do their job properly. In the short term, there are Somali veterinarians overseas who might be persuaded to return to Somalia, and foreign veterinarians who could be utilised now that the security situation is improving. There are also young Somalis overseas who could train as veterinarians, although they would need orientation to livestock production and health in the Somali ecosystem.

Training of veterinarians is a challenging task, especially on the assumption that at least a proportion of graduates have to attain a standard of knowledge and practice acceptable to countries with which they trade, an "international" standard. The main prerequisite for entry to a veterinary school is secondary education with high grades in science subjects. The level of secondary education in Somalia is insufficient at present to produce school leavers of the required calibre, although standards are rising, fuelled by private sector schools funded by Somali returnees and the diaspora. Training of veterinarians is expensive because of the length of training required to cover the wide range of topics, the infrastructure needed to give practical tuition and the high cost of tutors. Thus it is not possible to justify establishment of a graduate veterinary school in Somalia in the near future, although the situation should be reassessed in the next 5 years.

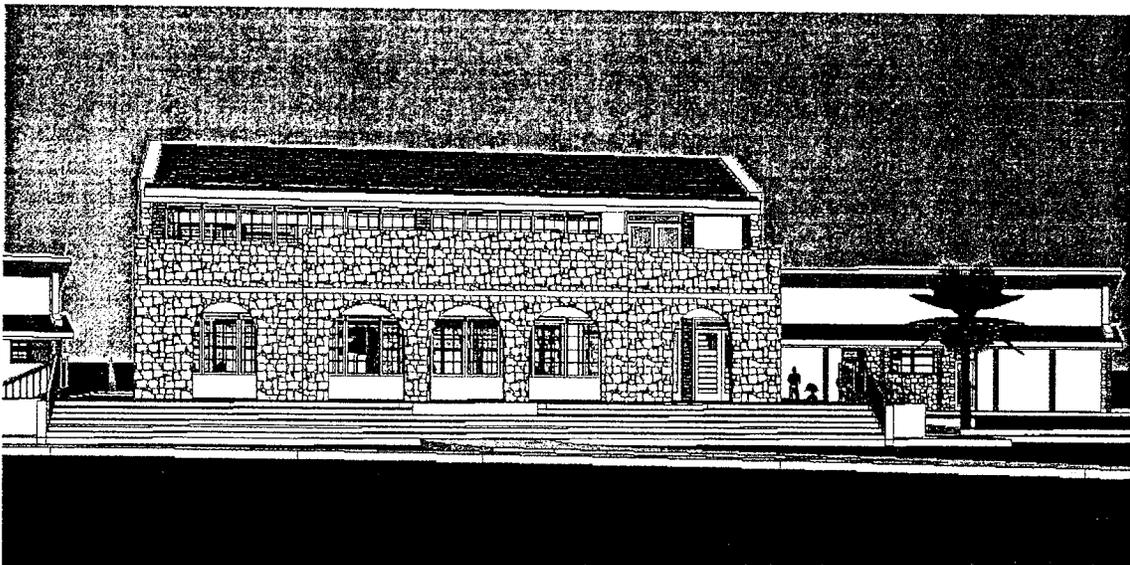
Relocated Sheikh Intermediate School, 9 classrooms, teachers office, sanitary facilities



Relocated Sheikh Intermediate School, finishing touches



Architects drawing, STVS conference hall and library



Consultant's Discussion Notes

Royal Danish Embassy: 31st Jan, Anne Marie Madsen

Reporting style of TN not concise; exec summary sufficient; output reporting instead of activity reporting requested

Financial support through AU-IBAR from 2005 through 2009, objective poverty reduction through support of livestock sector

TN good and experienced partner, local knowledge, good institutional memory, probably better suited for the situation than FAO or others

Change of personnel (Alessandro Zanotta) lead to reduced contacts

Advice: shift for further support to UNDP to ensure financial sustainability

Advice: Focussing of donor activities and pooling of European donor funds needs (joint needs process, joint strategy paper by 5 EU donors plus Norway) TN needs to adapt to that

Italian co-funding through EU no longer possible

Advice: TN participation in sector commissions recommended

Advice: engage more with Somali authorities

SAHS Somali Animal Health Services Project: 31st Jan, Henry Wamwayi

SAHS can provide inputs into STVS:

- Student attachment for field work
- Training of tutors in surveillance methods
- Could get involved in teaching later
- Assist in design of buildings, structures and facilities
- Place 'container lab' at STVS for services and training

Other possible inputs through SERECU (AU-IBAR Somali Ecosystem Rinderpest Eradication?) or SSS Somalia Support Secretariat (UNDP)

AU-IBAR African Union - Interafrican Bureau of Animal Resources: 1st February, Dr. Traore, Dr. Oloo, Dr. Nuru

- Regional approach recommended, Somali Ecosystem not an ethnic reference
- Certification issues for trade, not possible without official players involved
- Host government not recognised internationally
- Curriculum review to allow broader job opportunities
- Potential role for STVS in human capacity building for SERECU
- High fluctuation of personnel at STVS
- Link with EU supported project on Livestock Trade and Marketing

More roles for STVS: upgrading professionals from the field, i.e. present inspectors, various project personnel, private sector service personnel, livestock traders

Biggest problems: Accreditation, affiliation with recognised and reputed institution in the region, University of Nairobi, Egerton University, AHITI, Makerere, Debre Zeit?

EU – Somalia Unit Nairobi, 1st February, Dr. F. Mahler

Staff time allocation, both expatriate and local?

Outreach (extra mural) activities, information (reference) centre?

Investments, infra-structures?

Course duration, intake quality, intake requirements, and entry qualifications

FAO, Hargeisa Office, 4th February, Ali Ismail, FAO SWALIM, Ali Mohamoud Guled, LICUS Project

Steering committee members

Attachment of students on certification exercises at border facilities

Cooperation with STVS in Animal Welfare Booklet

Training material contributions by STVS staff to projects

Very high expectations by FAO Somaliland and Somaliland Authorities regarding STVS output

Students attached to ministry staff for vaccinations, spraying, ear tagging

Ministry of Livestock, Hargeisa, 4th February, Minister, Vice-Minister

Social call, minister requesting short debriefing on Saturday, 10th February

Ministry of Education, Hargeisa, 4th February, Director General

Livestock based economy of Somaliland and Somalia

STVS highly appreciated

Curriculum development requires involvement of Ministry of Education in future

Worry about accreditation, affiliation

STVS Hargeisa, 4th February, Leonardo Maria Palma, Civil Works Expert

Presentation STVS building plans, time frames, costs; presentation of photographs intermediate school Sheikh

Governors Office Berbera, 5th February, Governor Sahil Region,

Livestock economy 80% of Sahil Region

Market constraints for exports more politically motivated than health related

Recruiting students from other countries necessary

Change of STVS from Terra Nuova to international Agency

Financial support from Somaliland Government possible

Stressing importance of next steering committee meeting

Port Veterinary Officer Berbera, 5th February

Very complimentary of STVS students

Has already had attachment of 2nd and 3rd year students

Certification, animal health issues, animal welfare issues

Fish inspection

STVS Sheikh, 5th February, Junior Educationalist

Problem oriented teaching, practical skills most important

Organising story flow into master time table

Keep records of educational affairs

Methodology support for tutors, evaluation of lessons taught

Setting assessment papers for all tutors

Linking STVS with educational trends, nationally and internationally

Teaching communication skills

Matter of accreditation entirely with Lucy

Urgent need for more tutors

STVS Sheikh, 5th February, Group discussion with all Tutors

Following the original curriculum with constant updating and modification

Complaints about shortage of staff, books, medical equipment, drugs, high speed internet

Stressing the need to set up a modest clinic to interact with and service to the community, maybe Ministry could help with funding

Conduct awareness campaign in the production sector

Need refresher courses for tutors from time to time

Course for product inspector presently not appropriate

English teaching very much needed in view of regionality of programme

Recognition of certificates issued by STVS questioned

Sheikh, 6th February, field trip with 2nd year students, laboratory class with 2nd year students

Students enthusiastic, attentive, lively, and disciplined

Programme in the field: live camel evaluation, body condition scoring, discussion with owner on complaints, identification of possibly sick animals, taking of blood and faecal samples

Programme in the lab: processing of samples, preparation of slides, identification of *Trypanosoma evansi* in blood sample, identification of Strongyle type eggs in faeces

Sheikh, 6th February, informal interviews with 1st year students

Discussion on advertising and promotion of STVS in Somaliland, Somalia and Kenya, entry examination and recruitment, course obviously well publicised, radio, newspaper ads, secondary schools

Sheikh, 6th February, informal interviews with individual tutors

Similar arguments as in group discussion, some questioning on career options

University of Burao, 6th February, Vice-chancellor, Dean Veterinary Medicine, General Secretary

Embryonic Veterinary Faculty, presently very poor facilities, virtually no qualified staff, several MoUs within the region, some short lecturers from University of Khartoum, Veterinary Faculty in Shambat, getting assistance from STVS, tutors teaching courses on Thursdays

Sheikh, 7th February, in class with 3rd year students

Just observing class work, students attentive, lively

Hargeisa, 8th February, Dr. Ahmad Hassan, Veterinary Officer Western Region (Tog Wajaale border post and cattle market)

Tog Wajaale major clearing point for cattle from Ethiopia, Region 5, Afar Region, Ogaden, and from Somaliland; average 7000 cattle per month cleared for export to Yemen, UAE through Berbera

STVS students for attachment, small groups up to 4 for 4 weeks, practicing castration, vaccination, injection techniques, ear tagging, spraying, meat inspection for local market and certification procedures; students also doing field visits to villages around Tog Wajaale

Facilities pre-inspected by Dr. Biaou, Dr. Mahmoud and Tutors, MoU covering field assignments

Students give 15-page report on field work to Dr. Hassan, students graded in the field by Dr. Hassan, likewise report

Students generally well received by everybody, some traders show initial reluctance to let students handle their animals

Observing and recording various market activities relating to future job market and curriculum development

Hargeisa, 8th February, Abdullah Dirie Jama, Secretary General, Somaliland Chamber of Commerce

Problems with trade bans by Saudi Arabia

Deficiency in all export facilities, health services, holding grounds, fodder

Current mandate of STVS entirely export facilitation, no emphasis on production at all levels, mandate should be extended in future

Presently preference for training at technical level within local context, not degree level, degree level training can be done abroad but in the region, as Somaliland “under construction now”

Major animal health problems in Somaliland tick borne diseases, tryps, helminths

Role of private sector questioned, animal health public task

Nairobi, 12th February, FAO, Massimo Castiello, Livestock Project Coordinator for Somalia

Somalia livestock sector huge, 1 million carcasses, more than 4 million live animals exported

Technician training within local context and on local tasks most appropriate (why train in surgery when anaesthetic and suture material more expensive than cow?)

Exposure to external standards (OIE etc) through person to person as well as institutional linkages in the EA region

Public system not ready for graduates yet, public-private partnership only solution at present but clashes with traditional understanding

Export certification only through a) government, b) trained veterinary doctor

Certifying vets from importing countries (Yemen, Egypt) have taken over in some instances

Linkages need to be based on mutual advantages, especially in the region (consultative groups within universities)

FAO not in position to give direct support to STVS but could strengthen through attached components, i.e. meat lab through meat sector programme

Advice: STVS to develop into service institutions for agencies, training project staff, offering research opportunities

Advice: STVS needs political/public relations advisor for lobbying political institutions (IGAD, AU, agencies, and new donors OPEC, Islamic Bank, other Islamic institutions, Gulf States etc.)

Advice: Invite IGAD as observer to SCM to promote political ownership

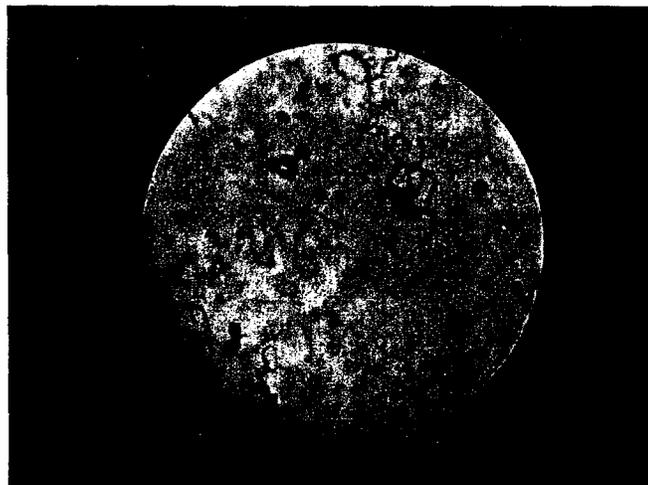
Field class: examining a camel reported sick by its owner



Lab class: staining blood samples of the camel inspected in the field



Lab class: identification of *Trypanosoma evansi* in the camel blood sample



External Actions of the European Community
Grant Contract No SO/0038/IT-COF/05

**Establishment of a Somali Regional Technical Veterinary
School and Reference Centre (Phase II)**

Sheikh Technical Veterinary School (STVS)

Mid-term Evaluation

Consultant: Horet Jürgen Schwartz
Nairobi and Berlin, February - March 2007

Overall Objective

Veterinary services in the Somali region safeguard public health, protect animal welfare, improve livestock production and sustain livestock export

Project Purpose

A regional veterinary training system supplies competent technicians and provides professional advice and support to major stakeholders involved in the Somali livestock industry

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Results

- 1. STVS conducts a recognised veterinary diploma course on a regular basis**
- 2. STVS is recognised by the stakeholders of the Somali livestock industry as a technical reference centre**
- 3. Institutional framework of the school and administrative set-up is fully developed**

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Activities relating to Result 1

- 1. Set up and run interim training activities in Sheikh**
- 2. Rehabilitate and refurbish STVS training facilities, and move training activities to final destination.**
- 3. Further refine existing curriculum and develop additional components in line with overall learning objectives**
- 4. Implement and refine students and curricula assessment system and regulatory system**
- 5. Raise visibility of STVS and actively promote the School's reputation and objectives at local and regional level**

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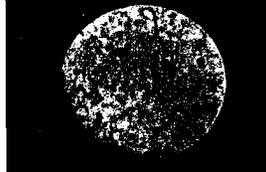
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Field class in a nomadic herd near Sheikh

Lab class processing blood samples

**One of the findings:
*Trypanosoma evansi***



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Relocation and Construction of Intermediate School in Sheikh



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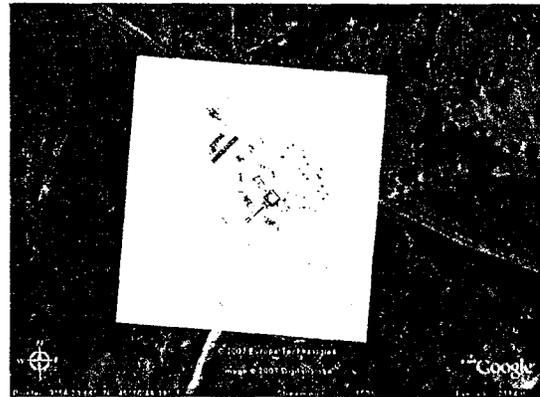
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Curriculum Development (Activities 1.3 and 1.4)

- Curriculum development completed for all three years, exception: Year-Three-Option "Livestock Product Inspector"
- Curriculum tested and modified regularly for all three years
- Learning agreements developed and implemented for field attachments of students
- Assessment system for students and curriculum in place, data base still needs further refinement
- Establishment of junior educationalist in Sheikh successful tool for quality assurance of curriculum and actual teaching

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Visibility of STVS (Activity 1.5)

Visibility and positive perception by local public gradually increasing, positive factors:

- Starting classes in rented space in Sheikh
- Starting physical development of site, i.e. fencing of school plot, relocation of intermediate school
- Field work of students with local livestock owners
- Limited but increasing services to local livestock owners
- Field attachments of student to regional veterinary officers

Activities relating to Result 2

1. Establish partnership agreements and related technology and knowledge transfer systems with recognised regional and international centres
2. Establish and maintain communication network (academic and technical) with local stakeholders and beneficiaries.
3. Identify areas of interest and participate at or organise technical conferences and seminars
4. Set up and operate a comprehensive information and documentation centre

Partnership Agreements (Activity 2.1)

International

- University of Bologna, Faculty of Veterinary Medicine, agreement drafted and ready for signature

Regional

- University of Nairobi, Faculty of Veterinary Science, contact initiated, follow-up pending
- Makerere University Kampala, Faculty of Veterinary Medicine, contact initiated, follow-up pending
- Kenya Meat Training Institute, MoU signed

Local

- University of Hargeisa, agreement on Foundation Course, cooperation suspended
- University of Burao, MoU signed
- Ahmoud University Boroma, MoU signed

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Reference Centre (Activities 2.2 through 2.4)

- Reference centre prominent part of the project proposal and without doubt a great asset
- Achievement to date very limited
- Clearly dependent on moving into final premises
- No proper budget foreseen
- No proper planning of possible tasks / activities
- No personnel allocated, role of tutors and school management unclear
- Role of AU-IBAR unclear

Activities relating to Result 3

1. Identify and establish the legal framework of STVS, with specific reference to its regional mandate
2. Develop and establish business plan and secure medium term funding requirements
3. Develop and establish sustainable management structure for STVS
4. Support to STVS through Steering Committee

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Legal status, business plan, and accreditation

- Legal Status
- First consultants draft report May 2004, final report November 2004, follow-up report December 2004
- Preparation of various legal sample documents by legal consultant during spring / summer 2006
- Frequent mentioning of legal status issue in Steering Committee Meetings
- However, so far no discernible action

Legal status, business plan, and accreditation

- Business plan
- Business plan for STVS directly dependent on legal status
- Sustainable management for STVS partially dependent on legal status

Legal status, business plan, and accreditation

- Accreditation
- Formal accreditation only possible if STVS legally recognised entity
- Formal accreditation only possible if sustainability of STVS ensured
- Loose affiliation to other institutions possible through MoU, since character of MoU usually informal and legally not binding

Summary Evaluation of the Project's Achievements by Result and Activities

Results Activities	1	2	3
1	+++	++	---
2	+++	+	---
3	+++	+ / -	++
4	+++	---	+++
5	++		

Major shortcomings of STVS project

- Demonstration and teaching farm not established nor foreseen
- Animal clinic not established nor foreseen
- Narrow focus of final year curriculum
- Course duration open to criticism
- More cooperation needed with other projects, positive exception SAHSP

Recommendations for the Work Plan to the End of the Current Project I

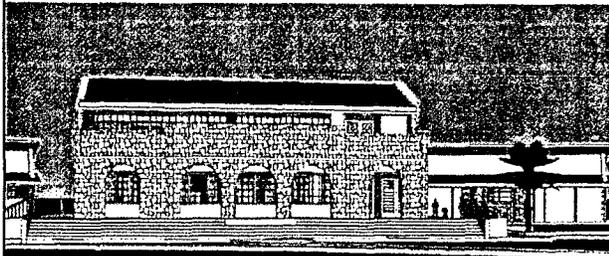
- Finish building activities, move to final premises
- Further consolidate curriculum and assessment procedures (data base)
- Recruit additional tutors
- Establish tracing programme for graduates
- Develop objectives, requirements and budget for reference centre, develop STVS website
- Develop objectives, requirements, physical plans and budget for demonstration farm and animal clinic

Recommendations for the Work Plan to the End of the Current Project II

- Decide legal status issue, implement procedures to assure legal status as soon as possible, give particular emphasis to regional aspect
- Develop business plan for STVS
- Follow-up accreditation issue, initiate formal accreditation procedure with at least one of the regional Institutions
- Seek cooperation with other projects in the livestock and education sectors

Recommendations for a Possible Follow-up Project

- Ascertain legal status of STVS
- Ascertain accreditation of STVS
- Set up all necessary management bodies
- Grand review of the curriculum, i.e. duration, focus, additional specialisations, short courses, training units for project personnel
- Establish and run reference centre
- Establish and run demonstration farm and clinic
- Increase student intake to 30 per class
- Establish cooperation with other projects



Thank you for your attention