# Proyecto Equinos El Salvador.

# Evaluation of the Veterinary Component.

# 1998 to 2003.

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## Resume

The World Association for Transport Animal Welfare and studies (TAWS) began work in El Salvador in 1998. In October 1999 TAWS, The International League for the Protection of Horses(ILPH) and the Ministry of Agriculture & Livestock, El Salvador(MAG) agreed to execute jointly a project to improve the management, health, nutrition, welfare and genetic quality of pack and draught animals of El Salvador. In addition the project has received support from the Equine Association of El Salvador (AEES), the Equine Federation of El Salvador (FEES) and the School of Agriculture (ENA).

This resume and the report which follows refers to the Veterinary Component of the project which was conducted by TAWS. The other aspects covering nutrition, management, shoeing and saddlery have been conducted by ILPH and will be reported separately. The technical, institutional and financial actions of the projects as well as the risks involved in its execution were described in a study prepared in 1999 prior to commencement of the project. Unfortunately this document has not been used as was intended during its preparation. It should have been a tool to monitor the progress of the project and the impact of its various components.

The transference of technology to private and government veterinary surgeons related to equine medicine, surgery, management and the use of the diagnostic laboratory was most successfully conducted through three annual seminars, practical training with horses during visits to stables and training of a Salvadoran veterinary officer in the United Kingdom for 5 months. 20 veterinary officers from MAG and 3 from the private sector who have received instruction are today working with pack and draught animals as well as leisure horses.

TAWS has raised £49,000.00 for the execution of the Veterinary Component of the project from its subscriptions, donations, ILPH, SPANA and the Royal College of Veterinary Surgeons Trust Fund.

Recommendations were made in the 1999 study referring to the methodology for the final evaluation using procedures developed by the Inter-American Development Bank.(IADB) These included the recording the results of the improvement in the condition score of horses as well as the impact of the project in improving the social and economic status of the owners. Without doubt the system could have been improved had constructive discussions taken place between the institutions participating in the project. A data base was established by TAWS and MAG in 1999, when 700 horses were condition scored.

At the time of preparing this report it has not been possible to ascertain the impact of the veterinary component on the health and condition of equines due to the following factors. Insufficient data related to condition score of horses pre and post project.

This may change as MAG in June 2003 has established an official Department of Equine health and will monitor the project's progress.
The decline of agriculture and livestock farming in Central America including the impact of the world coffee crisis, dumping of milk powder and the failure to introduce a national program to diversify crop and animal production.

The transfer of huge sums of US$ from Salvadorans working in the USA to their families in El Salvador which may remove the incentives to develop farming and introduce new technology.

Although these factors may have reduced the impact of the Veterinary Component, there is no doubt that the skills of the veterinary surgeons to diagnose, treat and prevent equine disease and injuries have been improved. Today there is in addition a private equine hospital in the country where modern veterinary medicine is provided. We believe that this too has benefited from the training given to its personnel.

Two Salvadoran veterinary officers have visited the United Kingdom to attend TAWS conferences and receive practical training in equine medicine, surgery and management.

TAWS is continuing to supervise a study of equine helminth parasitism in El Salvador. The goal of the study is to determine whether gastrointestinal parasites affect the fitness of working equines and to understand their epidemiology. It is hoped that a sustainable control strategy will be set in place following the study. This has been funded by the ILPH and RCVS.

TAWS has been pleased with the support that it has received from MAG and AEES. Transport, installations, equipment and translators were provided. It was a source of regret that AEES and FEES failed to fund the purchase of the equine dental equipment. (See page 13)

The joint agreement between ILPH, MAG and TAWS allowed the latter to review its participation in the project after a period of two years from its commencement. It was with considerable regret that the Board of TAWS decided in May 2003 to reduce active participation in the project. This decision was partially based upon the increasing difficulty of funding as well as the shortage of young veterinary graduates able to participate in the activities of the Charity.

The veterinary component of the project has created respect and goodwill between the veterinary surgeons of the United Kingdom and El Salvador. The appreciation received from MAG clearly show how welcome TAWS members are in El Salvador. The veterinary surgeons of Guatemala and Honduras have recommended that TAWS provides similar training in the future in their countries.

If MAG so requests efforts should be made to explore funding from the European Community (EC) or IABD to continue the project.

## INTRODUCTION

### Agriculture sector of El Salvador, Social and Economic Framework.

During the last two decades the Agriculture and Livestock sectors of El Salvador have been affected repeatedly by catastrophes. These include civil war(1981-1992) during which time it was impossible to raise cattle and produce crops in many areas of the country. Dumping of milk powder by well intentioned International Development Agencies ruined many indigenous milk producers. Hurricane 'Milch' in 1999 and more recently repeated earthquakes caused losses of cattle and horses. In addition to all this, there has been a reduction in technical assistance services from the government due to the introduction of a policy to control its expenditure.

The agricultural situation is serious, as El Salvador is dependent upon its agriculture and livestock to feed its seven million inhabitants and to raise hard currency for essential commodities including petrol and medicines. Its main export was coffee. Global overproduction of coffee has had a devastating impact on the economy of El Salvador. Many large coffee producers as well as small farmers are today unable to cover the costs of cultivation and processing of the crop. Consequently they are abandoning their estates and small holdings.

Unfortunately the government has no clear plan to diversify agriculture by means of the introduction of new products to help farmers overcome these difficulties.

As a result of the mountainous terrain and poor roads, often inaccessible to motorized vehicles and specialized implements and the poverty of the rural communities, small farmers in Central America are dependent upon transport animals (horses, mules, donkeys and oxen) for the cultivation of the land and transportation of goods. The social, economic and cultural structure of the nations of Central America including El Salvador has made it difficult to help them to be more efficient in the cultivation of crops and rearing livestock.

The government authorities are aware that the farmer will remain in his rural community only if his income and standard of living can be increased by improving agriculture and for that he needs his draught and pack animals.

British Institutions including DIFED have provided since 1970, technical assistance to improve livestock production, working with veterinary surgeons, farmers and MAG. Further assistance given by the project between 1999 to 2003 and is compatible with the aims and goals of earlier efforts by the Ministry of Overseas Development, London and has been much appreciated.

In addition between 1980 and 1995 loans from the Inter-American Development Bank and technical assistance from the European community went some way to help the small farmers use modern technology to produce crops and rear livestock. Unfortunately the coffee crisis wreaked havoc on those initiatives. Furthermore the

huge sums of US Dollars sent to their families from the USA by Salvadorans working in that country to their families may have damaged the truly aggressive spirit of this small nation to progress and produce.

El Salvador has 90,000 working horses and a further 3000 that are used for leisure. The latter include polo, dressage and jumping horses and they are of a superior quality to the working farm equines and are more efficiently managed.

**The 'Projecto Equinos El Salvador'**

In 1997 and 1998 discussions took place with the Ministries of Agriculture of El Salvador, Guatemala and Honduras and the Regional Animal and Plant Health Organization (OIRSA) concerning the execution of a project to provide technical assistance for owners of pack and draught animals in the common frontier area known as El Trifinio. The principal goal was to improve the management, health, nutrition, welfare and genetic quality of the animals. OIRSA decided to withdraw from the project as it main activity was to control and prevent infectious disease in livestock. The project includes husbandry improvement which does not figure in OIRSA actions.

The project commenced in El Salvador in October 1999 as a pilot program with the support of ILPH and TAWS with small farmers, MAG and AEES. The Ministry provides transport, counterpart veterinary staff and installations.

**Aim of the Project**

To improve the management, health, nutrition, welfare and genetic quality of transport animal located in El Salvador through sustainable technical assistance and training. It was planned to establish a small equine welfare training unit in El Salvador within eight years of the project's inception.

**Institutions involved in the Execution of the Project.**

The World Association for Transport Animal Welfare and Studies. TAWS TAWS was established in 1989 by a group of eminent veterinary surgeons and scientists to;
promote the improvement of the management, health and welfare of transport animals using scientific methods and humane practices.
Encourage the international exchange of information related to transport animals by means of conferences, meetings and research.

The Association was incorporated as a company in 1998 and granted the charity status in the same year. It has supported projects in the Sudan, Nepal and Botswana and conferences in India, Oxford, Newmarket and Mexico. It has also published scientific papers and proceedings of meetings related to transport animal technology.

**The International league for the Protection of Horses. ILPH**

The ILPH is a privately endowed, British based, Non Government Organization (NGO) devoted to the management of working horses (horses, donkeys and mules) in developing countries. The philosophy of ILPH, as outlined in its guidelines for its Overseas Training Programs, is:
To improve the welfare of wild, working and leisure equines.
To achieve a measurable and sustainable degree of reduced suffering of equines through better usage of the animal and hence, an improved livelihood for the animal's owner and /or user.
To achieve the above through education and training and introduction of effective practices in management and nutrition, which ensures an equine capable of working harder and more productively for its owner/user.

The ILPH has introduced the ' whole horse' concept, which covers all aspects of nutrition, equine management, saddlery/harness, farriery and foot care. This concept covers a broad spectrum of topics and introduces people, at a local level, to training and skills which would not normally be available to them. ILPH will in the future report the results of the development of their area of the project. It expects that its technology will improve the working capacity of equine on a broad scale and increase the income of communities which employ equines for transport and agriculture. The ILPH utilizes its own professionals in the various areas of expertise required. The objective is to train people to obtain skills, who themselves will become trainers and thus perpetuate the cycle of education and training.

**The Ministry of Agriculture and Livestock, El Salvador. MAG**

The MAG is legally responsible for the implementation of the following actions and programs;
The control and eradication of zoonoses (Tuberculosis, Brucellosis, Rabies, VEE and Hydatid Disease) as well as livestock diseases of economic importance (Vesicular Diseases and Hog Cholera)
Diagnosis and control of disease in livestock and poultry.
Registration of livestock, veterinary medicines and biologicals.
Epidemiological surveillance of Animal Disease with OIRSA.
Genetic improvement of livestock through artificial insemination,
Control of animal movement and quarantine.
Organization of small farmers and extension services for livestock improvement.
Research , development and training.
Administration and privatization of services

MAG has a budget, that covers salaries, some transport and administrative costs for operating the services but is totally insufficient for development and it cannot provide counterpart funds for projects supported by International agencies. This situation has changed little through the more than thirty years that the author has

visited the country. There is no reason to expect this to improve in the foreseeable future due to the crisis in the sector.

However MAG does have many years experience working with Technical Assistance Agencies and International Development Banks and TAWS has not had serious problems operating in this environment.

The veterinary component has used the MAG infrastructure of veterinary and extension services in the mountainous area parallel to the frontier with Guatemala and Honduras where roads and communications are difficult.

**AEES and FEES**

The project has also received support from two private Associations which support the leisure horse sector. The Equine Association of El Salvador (AEES) and The Equine Federation of El Salvador (FEES). They have sent their veterinary surgeons to the training courses and have provided transport.

**Services to be Provided by the Participants.**

In conjunction with MAG the Charities aim to provide the following practical equine training and education in El Salvador or the United Kingdom:

**A TAWS**

The provision of the Animal health Component conducted at national and international levels.

**National**

Annual 3 day conferences in equine medicine with international participation.
Provision of videos, training manuals and literature on animal health for use by schools and small scale farmers.
Organization of small farmers so that they may receive the benefits of the improved resources.
Annual visits by TAWS veterinary surgeons to transfer technology and evaluate progress of the project (organization of farmers, condition scoring and social and economic indicators)

**International**
Scholarships of 3 to 4 months in veterinary institutions in the United Kingdom, where emphasis is given to practical training in:
Equine medicine.

Equine parasitology.
Planning, execution and evaluation of projects and veterinary resources.
Development of schemes to provide instruments and textbooks for veterinary surgeons in El Salvador.

**B ILPH**

The provision of consultant trainers initially to conduct over a two-year period, two groups of four courses in
Management and nutrition.
Farriery and foot care.
**Saddlery and harness making and repair.**

Training a maximum of sixty students. After receiving a satisfactory review, the program of courses would be repeated subject to a further review. ILPH plans to provide a total of five years training with national trainers taking over full responsibility from the sixth year. There after ILPH plans to provide annual monitoring for four more years and following this, responsibility for ILPH's component of the will pass to the government of El Salvador.

**Review of the Project.**

In addition to the prescribed annual or biennial reviews the project shall be subject to continual monitoring and evaluation to determine the success of the training based upon the transfer of skills to the community and the impact that this has in improving the condition and well being of equines in the country. All training and education conducted must provide value for money and be sustainable.

## 5 Results of the Veterinary Component of the Training

**General Observations.**

Most comments in this section of the evaluation describe the results of the veterinary component of the project. Some observations of the ILPH component have been included to preserve the concept of an integrated project where all activities of the charities and MAG are focused on the improvement of the management, health and nutrition of working horses in Central America. With TAWS withdrawal it will be difficult to maintain this approach. The establishment of a Department of Equine Medicine may help to rectify this situation.

**Actions to date include;**
The preparation of a study of the social and economic importance of draught and pack animals in El Salvador. The major restraints which effect their efficient use were identified . Unthriftiness and poor performance in working horses appears to be

attributable to deficient nutrition, parasite infestation, poor hoof care and shoeing and unsatisfactory maintenance of saddlery. A parasite study has been commenced which to date indicates a clear difference between the sports and leisure horse sector where parasitism appears well controlled and the working animals where high levels of strongylate parasitism appears to exist.

The study described above includes a description of the project and procedures for its evaluation.

All farmers in the northern region of the nation are visited every three months by a government veterinary officer who offers advice concerning the management, health and nutrition of draught and pack animals.

More than 70 small farmers have received training in hoof care, shoeing, and saddlery from ILPH instructors from the United Kingdom and Mexico. Some of the Salvadoran farmers are working as instructors. This component of the project has been much appreciated by MAG and the small farmers.

ILPH and TAWS veterinary experts have provided training for Salvadoran veterinary surgeons, agronomists and owners of the large estates. The health component has focused on soundness, diagnosis of lameness, treatment and prevention of infectious disease and parasite infestation management, equine dentistry, rearing foals and use of the diagnosis laboratory.

Four annual visits have been made to El Salvador by TAWS veterinary experts to present papers at the annual seminar. In addition time was spent examining working and leisure horses to demonstrate lameness and disease. Dental problems including molar teeth irregularities, fractured teeth and teeth abscesses were identified. These dental problems were more frequently observed in working horses causing poor mastication of feed, unthriftiness and poor working performance. A 10 day practical and academic course in equine dental attention was provided in 2003. It was noted that greater dental care is given to leisure horses including rasping of teeth using manual and electrical powdered instruments. This care is not provided routinely.

The pilot phase of the project was successfully completed in December 2000. The cost was estimated by ILPH and TAWS to be £150,000.00. Activities of the project were suspended in the first quarter of 2001 due the government’s priority to repair the damage caused by a severe earthquake to the transport and agriculture infrastructure.

The ILPH training was conducted in the installations of the School of Agriculture, ENA, San Andres and in a hotel close to the border with Honduras. La Palma. The latter gave an opportunity for Honduran craftsmen to participate in hoof care, saddlery and equine management courses

The TAWS training courses took place in the MAG lecture theatre which is equipped with audio visual aids and seated approximately twenty students. Practical training was conducted at stables located in the San Andres valley, Sonsonate and Metapan.

A Salvadoran veterinary officer received training on two occasions in the United kingdom in equine medicine, shoeing and management of horses. The benefits from the visits may not have been those planned. His English and knowledge of British customs have been strengthened but unfortunately he has since been employed largely outside the field of equine management and medicine. The Salvadoran

coordinator of the project also visited the United Kingdom to present a paper at the TAWS Annual Seminar in 1998 describing veterinary medicine in Central America. The strategy of the project has been to build on existing skills and knowledge of craftsmen and veterinary surgeons through the training courses and visits to the United Kingdom. The project has progressed reasonably, which may be attributable to the visits and studies conducted before its commencement to identify risks and constraints expected in the transfer of technology. The technology used is simple and easy to transfer to farmers and veterinary surgeons.
An encouraging aspect of the project is the fact that communities remote to the pilot areas are requesting assistance. In addition Guatemala and Honduras has or wishes to send farmers and veterinary surgeons to the training classes.

**Specific Observations.**

**National.**

**Veterinary Training Courses.**

These were held in 2000, 2002 and 2003 at the installations of MAG in Santa Tecla. The subjects listed on page where presented at the veterinary training courses. In addition, between October and December 1999, whilst preparing the study described on page, the author gave training to Salvadoran veterinary surgeons in project planning, use of the diagnostic laboratory, parasitology and condition scoring.

**Equine nutrition; formulation of rations, energy, protein, fats, vitamins and minerals, Pasture management, Estimation of weight.**

| **Name** | **Country of Origin** | **Year** |
|---|---|---|
| Geoff Chubb | Australia | 2000 |
| Manuel Ramirez | El Salvador | 2002 & 2003 |

**Equine dentistry Anatomy & physiology of teeth, diseases, rasping and extraction of teeth.**

| **Name** | **Country of Origin** | **Year** |
|---|---|---|
| Doug Vieweg | United Kingdom | 2003 |
| Simon Vieweg | United Kingdom | 2003 |

**Use of the Diagnostic Laboratory, Diagnostic Techniques; Virology, Parasitology, Bacteriology and Case Histories.**

| **Name** | **Country of Origin** | **Year** |
|---|---|---|
| Roger Connan | United Kingdom | 2002 & 2003 |
| Clive Woodham | United Kingdom | 1998,1999, |

| | | |
|---|---|---|
| | | 2000,2002 & 20003 |
| Dr. Graniellos | El Salvador | 2000 & 2002 |

**Infectious Disease; Viral; VEE, EEE, WEE, Equine Infectious Anemia & Equine Influenza, Bacterial; Strangles, Anthrax, Diarrheas (E. coli), Clostridiasis and Pneumonia.**

| Name | Country of Origin | Year |
|---|---|---|
| Dra. Marie Daba Masri | UNAM Mexico | 2003 |
| Dra. Julie Wilson | Minnesota USA | 2003 |

**Wound Management.**

| Name | Country of Origin | Year |
|---|---|---|
| Dra. Marie Daba Masri | UNAM Mexico | 2003 |
| Carl Boyde | United Kingdom | 2000,& 2002 |
| Dr. Manuel Ramirez | El Salvador | 2000 & 2002 |

**Lameness, Laminitis, Shoeing & Hoof care.**

| Name | Country of Origin | Year |
|---|---|---|
| Carl Boyde | United Kingdom | 2000 & 2002 |
| Haydon Price | United Kingdom | 2000 |

**Epidemiological Surveillance.**

| Name | Country of Origin | Year |
|---|---|---|
| Dr. Rolando Vargas | El Salvador | 2000 |
| Dr. Arturo Maldonaldo | El Salvador | 2000 |

**Parasitology.**

| Name | Country of Origin | Year |
|---|---|---|
| Dr. Roger Connan | United Kingdom | 2002 & 2003 |
| Dr Amilcar Ventura | El Salvador | 2002 |

**Proyecto Equino El Salvador.**
**Project Planning, Execution & Evaluation.**
**The Future of the veterinary profession in El Salvador.**
**FMD Epidemic in the United Kingdom.**

| Name | Country of Origin | Year |
|---|---|---|
| Carl Boyde | United Kingdom | 2002 |
| Clive Woodham | United Kingdom | 2002 & 2003 |

**Organization of Small Farmers.**

The Livestock Extension Services of MAG provides every three months a technical assistance visit to small farmers. The service was designed by technicians from Israel in the late 1980s and originally funded by IADB. It was operating fairly efficiently until 2002 but since then declining budgets principally for transport and fuel, have restricted farm visits and veterinary attention. As mentioned earlier the government veterinary officers are better trained as a result of the project and this is benefiting the small farmers as they receive improved attention for their working horses.

**Annual visits by TAWS veterinary surgeons to evaluate the project.**

These were made in 1999, 2000, 2002 and 2003 and copies of the report are available in TAWS archives.

**International.**

**Scholarships.**

In 1998 Dr. Ernesto Calderon presented a paper at the TAWS annual meeting describing veterinary services in Central America and the role of OIRSA in the harmonization of procedures to combat animal disease. Principally those applicable to animal quarantine and control of animal movement. During the visit discussions took place concerning the planning and execution of the project.

In 2000 and 2003 Dr. Manual Ramirez visited the International Donkey Sanctuary, Devon, Equine Veterinary Practices in Dorset and Hampshire, the Veterinary Faculty, Cambridge, the Animal Health Trust, Newmarket. A Blacksmith in Monmouthshire and the ILPH Snetterton, Norfolk. Over a period of five months he received instruction in equine management, general medicine and surgery, virology, parasitology and use of the diagnostic laboratory. Manual is a very willing and helpful professional. As already explained it is unfortunate that since his return his employment, largely outside the equine field, has not allowed the full use of his new skills although he has imparted some of his knowledge at the annual seminars held in San Salvador and during the ILPH training courses.

**Equine Parasitology Study.**

**See appendix No. 1**

**Donation of Textbooks, Instruments and Diskettes of Training Course Presentations**.

TAWS has donated to the veterinary profession of El Salvador the instruments and books described below.
Dental equipment 2003 by Carl Boyde, Value £2500.00
Surgical Instruments 1999 by Clive Woodham, Value £600.00
Text books 2001 by Clive Woodham, Value £300.00.
Diskettes of the presentations at the training course. These are held by Dr. Ernesto Calderon for use by the veterinary profession of El Salvador.
Veterinary surgeons and students of all nations of Central American will receive in the final quarter of 2003 a copy of a Guide for Animal Care translated into Spanish. £20,000.00 has been donated by SPANA for this purpose. The Guide describes the anatomy, physiology, medicine and surgery of horses, dogs and cats and is a useful reference book for the management of these animal and treatment of disease..

**Cost/Benefit of the Veterinary Component of the Project.**

Taws has provided three years four months of training in place of the original period of two years established in the project agreement. TAWS has invested £49,000.00 in the training and MAG £8,000.00 in transport and salaries.
The budget that was prepared in 1999 does not reflect the accurate costs to execute the veterinary component of the project since 1998. In 1998 there were planning expenses. These should be included as legitimate costs and should figure in the budget. (IADB Methodology).
Using IADB procedures for estimating costs of projects, the Bank would have budgeted £100,000.00 to deliver the packet of technology. It may be concluded that TAWS executed the activities of the component for £50,000.00 less than an International United Nations Agency or Consulting Company.
Salvadoran veterinary surgeons received quality training from international veterinary experts from the United Kingdom, the USA, Australia and Mexico in equine management, health and nutrition at a very low cost to the MAG Veterinary Service. Without doubt as a result of the training they are more aware of equine disease and better prepared to treat it.
In the transference of veterinary technology, it is believed that enormous strides were achieved. Nevertheless it has been impossible to quantify the benefits of the component in economic terms as no sustainable effort, except in 1999 has been made to use condition scoring of horses and there is no evidence to demonstrate whether the condition of horses is improved as a result of the project as no registers have been kept. Hopefully MAG's new Department of Equine Medicine and ILPH will remedy this serious omission.

In a similar manner, time honored tools in international development including the Internal Rate of Return of the project were not used as there is insufficient data pre and post project. Also during the planning of the project it was not clear how

acceptable the execution of the veterinary component would be to the Salvadoran authorities.
The transference of veterinary technology has been a great benefit and has been well by the Salvadoran veterinary authorities. It is a pity that means cannot be found to continue the veterinary training.

Table No 1. TAWS Expenditure 1998,1999,2000,2002 and 2003

| | Sum in Pounds Sterling |
|---|---|
| | 4,000.00 |
| | 9,000.00 |
| | 8,000.00 |
| | 3,600.00 |
| | 11,600.00 |
| | 12,800.00 |
| | …… |
| Total | 49,000.00 |

**Table No 2 Estimated Costs using IADB Procedure 1998,1999, 2000, 2002 and 2003**

| Activity | Costs in Pounds Sterling |
|---|---|
| International Experts 174 days @ £250 per day | 43,500.00 |
| Expenses 174 days @ £100 per day | 17,410.00 |
| Travel International | 10.000.00 |
| National | 1,500.00 |
| Donation of Equipment, Books and Diskettes | 8,300.00 |
| Scholarships | 8,000.00 |
| | …… |
| Administration Fee 12% | 10,644.00 |
| | …… |
| Total | 99,344.00 |

**Comments concerning the Administration and Execution of the Project**

The execution and administration of no project is free of problems and the author of the evaluation has tried to examine some of the constraints in this section of the evaluation. He hopes that they will not be taken as a criticism but as experiences, which should be considered in the planning of future projects for the improvement of management and health of pack and draught animals.

**General Comments**

The observations presented on page 43 of the study describe the many cultural, social and political differences between El Salvador and the United Kingdom. The pace of life is different and experts to achieve progress must be patient if services do not arrive on time.

During the planning of the project it was concluded that the incorporation of Salvadoran veterinary experts was an element of vital importance for its successful execution. Dr. Ernesto Calderon was selected as the project coordinator. He conducted business efficiently with TAWS. Students, excellent installations, audiovisual equipment and transport were always available. TAWS understands that the delivery of these services was not always satisfactory during the ILPH training. The governments and private institutions of the nations of Latin America are accustomed to requesting funds to execute projects and technical assistance for social, technical and economic development from the World Bank, the Inter American Development Bank, United Nations Technical Assistance Agencies including FAO, WHO and the Atomic Energy Agency (Infectious Animal Disease). The project, as described in the document titled ‘ A Study of the Social & Economic Importance of Draught and Pack Animals of El Salvador’ employed the standard methodology for designing, planning, executing and evaluating project by the institutions listed above. This methodology, developed over fifty years, allows project planners to rapidly examine in depth the economic, social and institutional status of the nation benefiting from the project, and foresee risks which may occur in the project’s execution. The study was available in English and Spanish versions and copies were circulated to MAG, ILPH, the Salvadoran Equine Associations, ENA and TAWS.

The authors of the study were disappointed after 3 months efforts in 1999 and a personal costs of £8000.00 ( CBW ) so little importance was given to the document, that should have been one of the principle tools of the project. Later it was encouraging to find that many of the observations of the study found their way into the project agreement. As described in the next paragraph this situation could have lead to confusion in El Salvador. The fact that one of the two institutions providing technology was not accustomed to this approach and used its own unique project development systems may have been confusing for the beneficiary. In spite of this it is remarkable that so much technical progress had been achieved. It was a great pity that more thought was not given by TAWS, ILPH and MAG in the pre project planning phase of the Project to harmonize procedures for the transfer of technology. some misunderstandings could have been prevented.

Both ILPH and TAWS have accomplished much since 1999. Unfortunately there are differences between the two institutions. The former is a large Charity, that has been established for decades. It has efficient systems and adequate staff to raise funds and does not appear to have serious difficulties to allocate funds to projects. TAWS, on the other hand, was established as a Charity in 1998 and depends upon volunteers to operate its activities. Its modest contribution to the project has been raised by

members subscriptions, donations, sponsors and grants. In addition unlike ILPH, TAWS has no effective infrastructure to promote itself and its projects. The authors can imagine that it may have been frustrating for ILPH experts in the field to work alongside such an institution.

Similarly the financial limitations of MAG may be incomprehensible to experts from the United Kingdom visiting Central America who have not worked before in developing nations. The author's experience gained over thirty years suggests that MAG has always had difficulties to find counter part funds for projects. Consequently the institutions providing technical assistance have to constantly negotiate to obtain transport, staff and fuel. These limitations so often lead to good professionals becoming office bound and hence they find it impossible to contribute effectively in government services. The IMF does not appear to understand this and continually imposes budgetary restraints on developing nations such as El Salvador. Within this context the authors recommend that donors should provide transport if they wish for their experts to work efficiently in rural areas.

**Specific Comments**

Hospitality has been exceptional and enjoyed by both TAWS and ILPH experts. It must be remembered that TAWS and ILPH experts are guests in El Salvador and must accept local customs, working practices and the slow pace of life. Anglo Saxons have not influenced social and economic development and do not form a large group in the country.
Few experts have knowledge of Spanish and it is believed that some of the ILPH personnel may have displayed such energy and zeal for the efficient execution of the project as to be threatening to Salvadoran counterpart professional staff. Misunderstanding quickly followed.
It is very easy to operate in El Salvador. We all quickly learn that in Central America patience, restraint and diplomacy are the way forward
TAWS has an account in San Salvador managed by Dr. Ernesto Calderon. This works well. It should be explored by ILPH.
Before any training courses take place there is a huge amount of preparation by Dr. Ernesto Calderon. This was covered by his honorarium. Now that only ILPH is actively operating in the project, His input must be recorded carefully to ensure fair remuneration.

**Comments related to the Evaluation Methodology**

As mentioned earlier in this document the evaluation was based on systems developed by IADB. See pages 39 to 43 of the pre project study.
It was proposed that the results of all activities of the training by TAWS and ILPH would be recorded through annual reports. This has been carried out efficiently in the case of the veterinary component of the projects. This information is reported in detail in this evaluation.

The second action of the evaluation was to measure the improvement in the condition of the horse as a result of the project using condition scoring. 689 horses were examined in Chalatenango, Morazan, Metapan and the Jockey Club in October 1999. This is the end of the wet season and the animals should be in good condition as there was adequate feed. The study showed that 93% were in poor or moderate condition. This left considerable scope for the project to have impact.

TAWS expected MAG to establish registers of data related to condition scores, endo and ecto parasite burdens, nutrition, hoof care and disease. This should have been obtained by official veterinary officers during the three monthly visits to small farmers. Unfortunately this was not carried out by MAG and an opportunity was lost to evaluate the impact of the project. It is encouraging that the Brooke Hospital and the University of Bristol are examining the importance of condition scoring and the impact of improving hoof care, health and nutrition on scores. Hopefully some useful tools will emerge to determine the condition of equines before and post projects.

The final part of the study prepared in 1999 was a review of the acceptance of the technology through improvement in the knowledge and skills of veterinary surgeons, increased use of equines in crop production, establishment of a Department of Equine Medicine in MAG and an improvement in the social status of horses owners. Most of these parameters are difficult to measure short term. Without doubt the vets have improved skills and MAG has now formed a Department of Equine Medicine. The utilization of horses in the cultivation of land, ecotourism and carriage work is taking place very slowly if at all. This work requires further investigation using social and economic data from the World Bank and IADB annual reports.

Over a period of 30 years the author supervised many large and small social development and animal health projects funded by IADB and DIFED. The beneficiaries were obliged under their contracts to establish pre and post project data banks and provide quarterly reports, final disbursement reports and 10 year post project reports. From the information presented in the reports the Banks prepared and published comprehensive technical, social and economic reviews of the results and impact of the project. It is interesting to record that the Bank's team would include for the appraisal an expert with many years experience working in the specialty of the project and an economist. This approach ensured that the technology provider and institution receiving the technical assistance are accountable for their actions. Unless this is carried out there is no way to know whether the project has helped to improve the health and management of horses.

Owing to factors outside the control of the project including the declining income of small producers due to the world coffee crisis, no clear plans for the future of agriculture and the suspension of credit by the banks, the authors believe that there has been little or no change or even a deterioration in the condition of horses since 1998. However this does not render null and void the results of improving the skills of blacksmiths, saddlers, extensionists and veterinary surgeons.

Probably the most important result of the project has been the reinforcement of the friendship and the respect between technicians and professional from the United Kingdom and El Salvador. In the case of El Salvador it has lasted thirty years and surely will continue as a result of the project.

Funds should be found to take forward the evaluation.

## Conclusions

In terms of the transfer of technology the veterinary component of the project was successful. However given the constant evolution of veterinary medicine it cannot be regarded as definitive. El Salvador and neighboring countries would benefit from similar projects in the future. Meanwhile MAG needs to review the organization of small farmers as well as their needs for extension and veterinary services. New approaches and technology are urgently required for evaluation of similar projects. Transfer of veterinary technology can be carried out cheaply and efficiently using procedures described in this document. Identifying young vets to give their time may be very difficult in today's commercial world.

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## Appendix 1

## TAWS Equine Helminth Parasitism Project in El Salvador.

**Roger Connan BvetMed, PhD, MA, MRCVS**

El Salvador was visited by Dr. Roger Connan in February 2002 and April 2003. On each occasion time was spent at the MAG laboratory in San Salvador and on field visits, training the technical and veterinary stall in the basic techniques needed for helminth investigation.

Visits were paid to a cooperative farm in Metapan and to polo fields and a riding school near the city in 2002. In 2003 visits were to a cooperative farm in Sonsonate and to two privately owned stables. At each site the management of the horses was recorded together with the use made of anthelmintic. Faecal samples were taken from the animals, whose age and condition score were recorded.

In the laboratory the gastro-intestinal tracts of three horses slaughtered at the local zoo were examined and total worm counts performed.

Although useful data were obtained in 2002, no momentum was achieved for the progress of the project because the cooperative at Metapan, where the investigation was to continue became bankrupt and sold its horses and because the Salvadoran veterinary surgeon who intended should lead the work, withdrew from the project. In the light of this experience in 2003 training was given to three young veterinarians while a fourth, although unable to attend the training because of illness, has been ascribed to the project. The laboratory staff are unchanged.

### Results

### Post Mortem Worm Counts

Only three horses have so far been examined but in mid dry season there were still significant adult cyathostome populations (<35k) and at the same time, in two there were also significant numbers of hypobiotic larvae (<20k). It was also striking that all three animals carried Strongylus vulgaris infect5ions (30-70) with evidence in one, early in April, of recent emergence from the mucosa.

### Metapan

At the time of the visit in February, only midway through the dry season, there were already several horses in very poor condition (one animal recorded 2 on a scale of 1 to 10) and most showing high faecal egg counts. No anthelmintics were used here.

### Sonsonate

This is a cooperative employing 200 people. The herd of some 20 horses shares pastures with a dairy herd as well as a suckler beef herd. There is no arrangement to monitor these horses regularly and so far there have been four monthly visits. At the time of the visit in early April many of the horses were stabled while others were

with the cows on irrigated fields. Again no anthelmintic is used here but unlike those in Metapan, these animals were in very good condition. The pattern of faecal egg counts typical for any mature, fit, untreated horses. Three individuals have consistently recorded at around 1500 epg, 10 never over 200epg and the remainder intermediate.

**Private stable 1**
Nine horses stabled or yarded and zero grazed. No recent anthelmintic but ivermection is used irregularly. All the animals were in very good condition. All faecal counts <100epg. Mares here are bred but Parascaris equorum has not been noticed.

**Private stable 2**
Four horses stabled and zero grazed except in so far as they are allowed exercise on the grass within the compound. Dung is removed immediately. These horses were in very good condition and faecal egg counts were <50epg. The owner uses ivermectin regularly (probably 6 times /annum) primarily because he holds the franchise.

**Riding stable**
**Polo field**
Largely zero grazed and management similar to the private stables with more or less frequent use of ivermectin.

**Discussion**
Very preliminary results indicate that helminth parasitism does not represent a problem for the sports and leisure horse sector. The privately owned horses seen including polo ponies, eventers and riding animals. All were predominately zero grazed, cut crops being fed to them in stables or yards. Where there was access to grass, faeces were picked up regularly. All owners claimed to use ivermcctin regularly.
While the epidemiology probably follows the predictable pattern with a role for hypobosis through the dry season, management practices keep worm populations to a minimum and probably would do so without the use of anthelmintic.
In farm situations, Metapan and Sonsonate appear to represent opposite ends of a spectrum. At Sonsonate mixed grazing and adequate nutrition in largely mature animals similarly keeps worm populations to a satisfactory minimum without the use of drugs. However, the original question behind this project, namely the effect of worms on the animals kept under more extreme conditions represented by Metapan, remains unanswered.

Future Work

- Continue to monitor faecal egg counts/condition score at Sonsonate for a total of 12 months.
- Replace Metapan with one or more cooperatives in similar situations and with a total of at least 40 horses. Monitor for 12 months, give moxidectin to half the animals at the start of the dry season.

- Establish with the AEES how representative or otherwise, are the private stables above. Seek to discourage use of anthelmintic. In such situations one annual treatment may be enough. Vary the drug family and consider treating only animals in which the epg exceeds 200. Monitor efficacy by epg before and 2 weeks after treatment. Anthelmintic resistance may already be present
- Carry out 4 or 5 more post-mortem counts next dry season.

The inertia in other departments of the MAG laboratory was very noticeable in 2003. While infrastructure and staffing are present there is little activity in the laboratories and for instance, no routine post-mortem service appears to be available. There seems to be a serious lack of funds to run the establishment. It is hoped that additional funds may be obtained specifically to encourage this young group to develop.