

DRAFT CHAPTER 7.X

WELFARE OF WORKING EQUIDS

Article 7.X.1.

Preamble

In many countries, working equids, used for transport and traction, contribute directly and indirectly to households' livelihoods and benefit communities as a whole.

More specifically, they contribute to agricultural production and food security by transporting, for instance, water and fodder for other livestock, firewood and other daily needs to the homestead, agricultural products to the market; they provide draught power for agricultural work such as ploughing, harrowing and seeding, weeding and transport; they supply manure and, in some cases, *milk*, *meat* and hides for household use or income (FAO, 2014).

Working equids may be of direct or indirect use in commercial activities such as taxi services, construction, tourism and transporting goods. They can also be rented out and provide an income for the equid's owner and a small business opportunity for the hirer (FAO, 2014). In the case of the latter there can potentially be an increased *animal welfare* risk.

Finally, working equids relieve the physical burden of women and children and less able people in transport of domestic needs; they may strengthen social relationships within extended families and communities through sharing working animals at times of need, for example during ploughing and harvesting seasons. They transport people to health centres and medical supplies to remote areas and may also form an important part of weddings or ceremonial occasions (FAO, 2014) (The Brooke, 2014).

The welfare of these working equids is often poor and this may be as a result of their ownership by poor and marginalised communities who are unable to sufficiently resource their needs. Certain working contexts may present a particular risk to welfare such as working within construction industries (e.g. brick kilns).

Article 7.X.2.

Scope and definition

This chapter applies to the following working animals: horses, mules and donkeys which are used for traction and transport, for income generation as well as domestic use (non-commercial work). Equids used in sports or competitions, leisure riding or research are excluded.

Article 7.X.3.

Responsibilities and competencies1. Veterinary Authority

The *Veterinary Authority* is the responsible for implementation of animal health and welfare. In the case of working equids, responsibility may be shared with other government agencies and institutions as listed below and including but is not limited to those responsible for agriculture and transport.

2. Other government agencies

The responsibilities of other government agencies will depend on the range of working equid uses and contexts.

For example those agencies responsible for regulating brick kilns, whether for environmental or labour compliance, may also have a responsibility for the working equids involved in the industry.

Particularly in urban areas, the transport or other responsible agency may have legislative authority in dealing with traffic circulation and have a role to play in ensuring a safe environment for working equids as well as other road users.

Environmental protection agencies may regulate and enforce measures to prevent working equids from accessing rubbish or garbage sites or other potential sources of contamination (such as agricultural chemicals or cadavers).

The agency responsible for public health may have legislative authority in dealing with *zoonosis* such as glanders.

Education authorities have a responsibility in schools and through agricultural, paraveterinary and veterinary training; appropriate education and training can prevent many welfare problems from occurring.

3. Local government authorities

Local government authorities are responsible for many services and programmes that relate to health, safety and public good within their jurisdiction. In many countries the legislative framework gives authority to local government agencies with regard to aspects of transport, agriculture, public health, environmental health and inspection, and compliance activities including in relation to quarantine and responsibility for abandoned animals.

In many countries local government agencies are responsible for the development and enforcement of legislation relating to equine drawn carts and carried loads in traffic, *animal identification* (registration), licensing and disposal of dead animals.

4. Private sector veterinarians

The private sector *veterinarians* are responsible for providing advice to working equid owners or handlers and can play an important role in *disease surveillance* because they may be the first to see an equid suffering from a *notifiable disease*. The private sector *veterinarians* should follow the procedure established by the *Veterinary Authority* for reporting a suspected *notifiable disease*. Private sector *veterinarians* may also play a role (often in liaison with the police or other local authorities) in dealing with cases of neglect that can lead to welfare problems.

The private *veterinarians* should have competence in clinical examination, diagnosis and, treatment, preventive procedures such as *vaccination* (which may include contracted services from the government in the case of certain *diseases*), *animal identification*, nutrition, and management advice provision, surgical procedures and *euthanasia*. Two-way communication between the private sector *veterinarians* and *Veterinary Authority*, often via the medium of a veterinary professional organisation, is important and the *Veterinary Authority* is responsible for setting up appropriate mechanisms for this interaction.

Private *veterinarians* may also have a responsibility in supervising and coordination of *veterinary para-professionals* involved in delivering animal health services.

5. Non-governmental organisations

Non-governmental organisations (NGOs) and intergovernmental organisation should understand the role of working equids and may help to collect and provide information to support policy formulation, to advocate for and promote health and welfare of working equids.

Local NGOs are potential partners of the *Veterinary Services* in the development and implementation of working equid health and welfare programmes.

NGOs may also contribute, together with *veterinarians* and *Competent Authorities*, in educating the public in the importance of *animal welfare* of working equids.

6. Working equid owners and users

Owners and users should ensure that the welfare of the equid, including behavioural needs, is respected and the equid is protected, as far as possible, from injuries, harm, neglect and infectious *diseases* (e.g. through *vaccination* and parasite control). Provision of appropriate feed, water and shelter is also a responsibility of the equid owner.

Article 7.X.4.

Criteria or measurables for the welfare of working equids

Although there is no single measure of *animal welfare*, focusing on issues that improve animal health and the needs of working equids will bring about improvements in *animal welfare* in practice and ensure that legislators can make evidence based decisions (Dawkins, 2006).

The following outcome-based measurables can be useful indicators of *animal welfare*. The use of these indicators and the appropriate thresholds should be adapted to the different situations where working equids are used.

1. Behaviour

Presence or absence of certain equine behaviours could indicate an *animal welfare* problem, including fear, depression or pain. Non-specific behavioural indicators of pain include aggression, restlessness, agitation, a reluctance to move and a lowered head carriage. Other behaviours have been well documented (at least for horses) for abdominal, limb and dental pain (Ashley *et al.*, 2005). Behaviours differ between donkeys, horses and mules and a good understanding of normal behaviour of each species is required.

2. Morbidity

Morbidity, including incidence of *disease*, lameness, injuries or post-procedural complications, may be a direct or indirect indicator of the *animal welfare* status.

Understanding the aetiology of the *disease* or syndrome is important for detecting potential *animal welfare* problems. Scoring systems, such as those used to score lameness, can provide additional information.

Post-mortem examination is useful to establish causes of *death*. Both clinical and post-mortem pathology may be utilised as indicators of *disease*, injuries and other problems that may compromise *animal welfare*.

Annex XIV (contd)

3. Mortality

Mortality, like morbidity, may be a direct or indirect indicator of the *animal welfare* status. Depending on the context, causes of mortality should be investigated including, temporal and spatial patterns of mortality and relating associated husbandry and handling practices.

4. Body condition

Poor or changing body condition may be an indicator of compromised animal health and welfare and scoring systems help provide objectivity (Kay G., Pearson R.A. & Ouassat M. (2004); Pearson R. A. & Ouassat M., 1996; Carroll C. L. & Huntington P. J., 1988).

5. Physical appearance

Observation of physical appearance will often provide an indication of health and welfare. Attributes of physical appearance that may indicate compromised welfare include:

- presence of parasites,
- abnormal coat, texture or hair loss,
- excessive soiling with faeces, mud or dirt,
- dehydration (measured by drinking behaviour) or heat stress,
- emaciation,
- feet abnormalities,
- abnormal discharges,
- wounds or injuries,
- abnormal behaviour, postures and gait.

6. Handling responses

Poor human-animal interactions can lead to improper handling. This may include inappropriate driving and restraint methods such as the use of whips and sticks, and can result in fear and distress. Indicators could include:

- aversive responses to fitting of equipments and loads,
- defensive responses from the equid to the owner or user such as threatening facial expressions, kicking, biting and avoiding human contact,
- injuries to animals resulting from improper handling.

7. Complications due to management practices

Some management practices, such as castration, are commonly performed in working equids for improving animal performance, facilitating handling and improving human safety and *animal welfare*. They should be accomplished quickly, expertly and with the proper equipment. If these procedures are not performed properly, *animal welfare* can be compromised. Indicators of such problems could include:

- post procedure *infection* and swelling,
- myiasis,
- mortality.

It is important to note that some “management practices” are not based on evidence and are inherently bad for welfare. Evidence of firing, nasal slitting, lampas cutting and harmful substances put on wounds should be identified as indicators of poor welfare.

8. Lameness (Gait)

Traditionally, lameness has been defined as any alteration of the horse's gait. In addition, lameness can be manifest in such ways as a change in attitude or performance. These abnormalities can be caused by pain in the neck, withers, shoulders, back, loin, hips, legs or feet. Identifying the source of the problem is essential to proper treatment (AAEP, 2014). Lameness or gait abnormalities are the most common presenting signs of working equids to *veterinarians*. Ninety to ninety nine per cent of working equids may have hoof and limb problems (Burn *et al.*, 2010; Pritchard *et al.*, 2005).

Indicators of such problems could include:

- hoof conformation abnormalities,
- unequal weight bearing,
- hoof pastern axis and angles,
- lameness grades: there are various gait or lameness scoring systems; an example is one developed by the American Association of Equine Practitioners (AAEP).

The scale ranges from zero to five, with zero being no perceptible lameness, and five being most extreme:

0: Lameness not perceptible under any circumstances.

1: Lameness is difficult to observe and is not consistently apparent, regardless of circumstances (e.g. under saddle, circling, inclines, hard surface, etc.).

2: Lameness is difficult to observe at a walk or when trotting in a straight line but consistently apparent under certain circumstances (e.g. weight-carrying, circling, inclines, hard surface, etc.).

3: Lameness is consistently observable at a trot under all circumstances.

4: Lameness is obvious at a walk.

5: Lameness produces minimal weight bearing.

9. Fitness to work

Fitness to work is defined at the state or condition of being physically sound and healthy, especially as a result of exercise and proper nutrition, to perform work well (Saunders Comprehensive Veterinary Dictionary, 3 ed. Elsevier).

Annex XIV (contd)

Indicators of an equid's inability to carry out the work demanded of it include the presence of heat stress, lameness, poor body condition or weight loss, harness related wounds and aversive behavioural responses to, for example, harness or equipment fitting.

Article 7.X.5.

Recommendations

Articles 7.X.6. to 7.X.13. provide recommendations for measures applied to working equids.

Each recommendation includes a list of relevant outcome-based measurables derived from Article 7.X.4. This does not exclude other measures being used where appropriate.

Article 7.X.6.

Nutrition, feeding and watering

Energy, protein, mineral (including trace minerals) and vitamin contents in the diet of working equids, their balance, safety, digestibility and availability are major factors determining the traction power of the animals, their growth and overall productivity and their health and welfare (FAO, 2014; Pearson, 2005).

Working equids should be provided with access to an appropriate quantity of balanced feed and water which is safe (edible and with no biological, chemical and physical contaminants) and of adequate quality to meet their physiological and working needs. In case of feed shortages, the *animal handler* should ensure that the period of reduced feeding is short as possible and that mitigation strategies are implemented if health and welfare are at risk of being compromised (NRC, 2007).

If supplementary feed is not available, steps should be taken to avoid starvation, including *slaughter*, sale or relocation of the animals, or humane *killing*.

Working equids need some of their nutrient requirements to be met by fresh, green forage. For this purpose, owners and handlers should allow them to forage whenever possible and allow for an adequate number of working breaks to allow the animals to eat (Heleski *et al.*, 2010). Cut green forage should be provided when grazing is not possible. Long forage is important as well as green forage and should also be provided even when green forage is not available. Long fibre hay is better than chopped forage to prevent ulcers.

Inadequate diets and feeding systems that may contribute to *diseases*, stress, discomfort or to abnormal behaviour in working animals should be avoided. *Animal handlers* should be aware of the importance of the animals' nutritional needs and consult an expert for advice on ration formulation and feeding programmes when needed.

However, the most important nutrient for the welfare of working equids is water (Heleski *et al.*, 2010). Working equids need an adequate supply and access to palatable, safe water that meets their physiological, work, and environmental requirements which may vary (e.g. increased water need in hot weather).

Outcome-based measurables: mortality and morbidity rates, behaviour, changes in weight and body condition, fitness to work, dehydration (as measured by drinking behaviour), signs of heat stress.

Article 7.X.7.

Shelter: homestead housing, workplace shelter, environmental considerations, protection from predators

Effective shelter should be provided for working equids both in the resting and working environments. Shelter should provide protection against adverse weather conditions and against predators and injury as well as good ventilation and the ability to rest comfortably. Resting space should be large enough for the equid to lie down comfortably and to turn round.

1. Heat stress

Heat stress is a common condition in working equids which are often working in hot, humid environments and *animal handlers* should be aware of the risk that heat stress poses. Equid owners and handlers should be aware of how to prevent it through provision of appropriate shade or shelter along with sufficient drinking water (The Brooke, 2013). Owners may also be trained in effective treatment of hyperthermia as timely veterinary assistance may not be available.

Outcome-based measurables: largely behavioural, including: increased respiratory rate and effort; flared nostrils; increased head movement and lack of response to environment (Pritchard *et al.*, 2006).

2. Cold

Protection from extreme cold weather conditions should be provided when these are likely to create a serious risk to the welfare of equids, particularly of neonates and young animals and others that are physiologically compromised. Such a protection could be provided by natural or man-made shelter structures. Care must be taken that, in an attempt to protect against the cold, ventilation and air quality are not compromised. *Animal handlers* should also ensure that equids have access to adequate feed and water during cold weather (The Brooke WEVM, 2013).

Outcome-based measurables: mortality rates, physical appearance, behaviour including abnormal postures and huddling.

3. Protection against predators and injury

Good shelter is required to keep equids safe from predators and from road accidents, a common occurrence if equids are left free to roam. If working equids are housed alongside other domestic livestock, care must be taken to protect them from injury by horned cattle (The Brooke WEVM, 2013).

Outcome based measurables: morbidity (injury rate) and mortality rates, physical appearance, behaviour.

Article 7.X.8.

Disease and injury management: management of endemic disease, infectious disease, work-related wounds and injuries, planning for disease outbreaks, health service provision

1. Biosecurity and disease prevention

For the purpose of this chapter, biosecurity means a set of measures designed to maintain an equid population or *herd* at a particular health status and to prevent the entry or spread of infectious agents. Biosecurity plans should be designed and implemented, commensurate with the desired health status of the equid population or *herd* and current disease risk and for *listed diseases*, in accordance with relevant recommendations of the *Terrestrial Code*. These biosecurity plans should address the control of the major sources and pathways for spread of pathogens:

Annex XIV (contd)

- a) equids,
- b) other *animals* and disease vectors,
- c) people,
- d) equipment (e.g. harnessing, handling and grooming equipment, feeding utensils),
- e) vehicles,
- f) air,
- g) water supply,
- h) feed.

Outcome-based measurables: morbidity rate, mortality rate, reproductive efficiency, changes in body condition.

2. Animal health management

Animal health management means a system designed to optimise the physical and behavioural health and welfare of the working equid. It includes the prevention, treatment and control of *diseases* and conditions affecting the individual animal and *herd*, including the recording of illnesses, injuries, mortalities and medical treatments where appropriate.

There should be an effective national programme for the prevention and treatment of working equid *diseases* and conditions with clear roles and responsibilities defined for official and private animal health service personnel as well as for owners.

Those responsible for the care of working equids should be aware of the signs of ill-health or distress, such as reduced feed and water intake, changes in weight and body condition, changes in behaviour or abnormal physical appearance.

Animals at higher risk of *disease* or distress will require more frequent inspection by *animal handlers*. If *animal handlers* are not able to correct the causes of ill-health or distress or if they suspect the presence of a reportable *disease* they should seek advice from those having training and experience, such as *veterinarians* or other qualified advisers.

Vaccinations and other treatments administered to equids should be undertaken by people skilled in the procedures and on the basis of veterinary or other expert advice.

Animal handlers should have experience in recognising and managing chronically ill or injured equids, including those that are non-ambulatory.

Non-ambulatory equids should have access to feed and water at all times and be provided with concentrated feed at least once daily and hay or forage *ad libitum*. They should not be transported or moved unless absolutely necessary for treatment or diagnosis. Such movements should be done carefully using methods avoiding dragging or excessive lifting.

When treatment is attempted, equids that are unable to stand up unaided and refuse to eat or drink should be euthanised according to the methods indicated in Chapter 7.6., as soon as recovery is deemed unlikely.

Outcome-based measurables: morbidity rate, mortality rate, reproductive efficiency, behaviour, physical appearance, and changes in body condition.

Health is a major component of the welfare of an animal, as an animal in poor health is necessarily in a state of decreased well-being. Health may be assessed by:

a) The general appearance of the equid

This is a simple to evaluate and revealing parameter, it suffices to observe the posture and demeanour of the animal, its body condition, and the appearance of its coat.

b) The absence of injury

A wounded animal is suffering. Pain from wounds decreases welfare. Injuries may result from inappropriate external factors; they may result from a poorly adapted environment (e.g. hobble wounds or harness wounds), they may also be indicative of poor human-animal interactions.

c) The absence of disease

Evolution of *diseases*: *disease* patterns change with time and in working equids, overt clinical signs of infectious disease may often be difficult to detect. More commonly seen are multi-factorial syndromes or conditions involving multiple pathogens as well as environmental and management factors.

d) The effects of stress

Stress has a deleterious effect on the immune system; a high incidence of disease may be indicative of too much stress.

Article 7.X.9.

Handling and driving practice, handling facilities, personnel expertise and training, mutilations and other management practice

Poor management practices include bad handling, inappropriate restraint such as too tight tethering or hobbling, working animals that are unfit or immature, poor housing that does not protect the equids from adverse weather conditions (heat stress), inadequate handling equipment, excessive number of working hours, being underfed, lack of resting periods, working under heat stress, overloads, some traditional practices such as firing or, nostril slitting.

Some traditional beliefs encourage unsafe, non-effective and inhumane handling of working equids. Firing is carried out in the mistaken belief that it will cure problems such as lameness or respiratory disease and nostrils may be slit in an attempt to increase airflow in hot climates. *Veterinarians* have a role in educating owners and handlers of working equids to cease these inappropriate and ineffective practices and also in encouraging good management and handling skills.

Education of *veterinarians* on working equid health, handling, use and management is currently inadequately covered in most veterinary curricula and training programmes for drivers and operators and this should be addressed if such people are to fulfil their responsibility to train others.

Annex XIV (contd)

Equids should not be tethered or hobbled permanently; they should not be hobbled for continuous periods of more than 12 hours in any 24-hour period.

The tethering site should have a minimum radius of nine metres, and should be free from obstructions that may entangle the tether. Adequate water and feed and frequent supervision should be provided.

Mares in season should not be tethered with stallions; mares about to foal or with a foal should not be tethered.

Equipment used to hobble must be designed for hobbling. The parts of the hobbles which are in contact with the skin should not be made from material that causes pain or injury (Burn *et al.*, 2008).

Harness injury should be prevented through daily checking of harness for damage and prompt, effective repair as necessary. Equids should be checked after work for signs of rubbing and hair loss and the source of any problems should be removed through maintenance and padding where required. Bits in particular should have no sharp edges and should be of the appropriate size for the animal.

Outcome based measurables: mortality and morbidity rates, physical appearance (firing, harness and hobbling wounds and lameness), behavioural signs.

Article 7.X.10.

Behaviour and social interactions

Natural behaviours and social interactions differ between horses, mules and donkeys, and a familiarity with normal and abnormal behaviour of each type of working equid is recommended in order to interpret the welfare implications of what is being observed.

Some behaviours may indicate an *animal welfare* problem but may not be uniquely indicative of one type of problem; they may be exhibited for a variety of different welfare causes. Depression, apathy, dullness and lethargy in equids which are usually active and alert, can be indicative of a welfare problem. Changes in eating or drinking habits may indicate a welfare problem, especially a decreased feed intake. This might also be an indicator of dental problems; poor feed quality or even feed contamination.

A variety of other behaviours may also be observed in working equids.

Behaviours indicating discomfort or pain such as:

- Head pressing, stable walking, weaving, teeth grinding, grunting, food dropping, and inability to eat normally. Such behaviours may indicate disease process, abdominal or cranial pain.
- Depression, circling, foot pawing, flank watching, inability to stand up, trashing, rolling. Such behaviour may indicate abdominal or other discomfort.
- Disturbance of ground or bedding. Such behaviours may indicate disease process, abdominal pain, malnutrition.
- Weight shifting, foot pawing, reluctance to move or abnormal movement. Such behaviours may indicate leg, foot or abdominal pain.
- Head shaking, discharges or avoidance of head contact. Such behaviours may indicate head, ear or ocular discomfort.
- Itching, rubbing, self-inflicted abrasions. Such behaviours may indicate skin problems, parasites.

Annex XIV (contd)

- Non-specific pain in horses: restlessness, agitation and anxiety, rigid stance and reluctance to move, lowered head carriage, fixed stare and dilated nostrils, clenched jaw, aggression and reluctance to be handled. In donkeys these behaviours are more subtle and may not be recognised.
- Abdominal pain in horses: vocalisation, rolling, kicking at abdomen, flank watching, stretching. In donkeys, dullness and depression.
- Limb and foot pain in horses: weight-shifting, limb guarding, abnormal weight distribution, pointing, hanging and rotating limbs, abnormal movement, reluctance to move. These signs are more subtle in donkeys, although repeated episodes of lying down are reportedly more indicative.
- Head and dental pain: headshaking, abnormal bit behaviour, altered eating; anorexia, quidding, food pocketing (Ashley *et al.*, 2005).

Behaviours indicating fear or anxiety such as:

- Avoidance of humans, especially when handlers or objects associated with their handling come close,
- A reluctance by the working equids to engage in their use for traction or transport or even a cessation and aggressive behaviour especially when fitting equipment or loading is undertaken.

Outcome-based measurables: behaviours indicative of discomfort or pain, sociability with humans and other equids, alertness, injuries, changes in weight and body condition, willingness to accept equipment and loading for work.

Article 7.X.11.

End of life issues: euthanasia, slaughter (including end of working life, abandonment)

When *euthanasia* is practised in working equids, the general principles in the *Terrestrial Code* should be followed. *Euthanasia* is the humane method of ending an animal's life in the most pain-free and least stressful way possible. Otherwise the working equid may suffer a prolonged and painful *death* by abandonment, neglect or disease or acute, painful death such as being eaten by *wild animals*, or hit by a road vehicle.

Article 7.X.12.

Appropriate workloads

No equid under the age of four years should be worked. They are under developed and their bones have not had time to mature sufficiently to cope with the rigours of work. In horses upper fore and hind limb growth plates do not close until four years of age and spinal ones not until five years of age. Animals that are subjected to work too young in life will usually suffer from leg and back injuries in later life, resulting in a much-reduced working life.

No mares should be ridden or worked within three months of foaling.

Special considerations should be given to old animals.

Animals should work a maximum of six hours per day and should be given at least one full day's rest in every seven-day period (preferably two).

Consideration should be given to the weather conditions (work should be reduced in very hot weather). Breaks should be given at least every two hours and fresh water should be available.

Annex XIV (contd)

All animals should receive sufficient good quality feed corresponding to their individual requirements. Fresh water should be available to aid digestion.

Sick or injured animals should not be worked. Any animal that has been under veterinary treatment should not be returned to work until agreement from the *veterinarian* is received.

Animals should be in good health and fit to do the work that is required of them.

Outcome based measurables: behaviour, body condition, dehydration, handling response, gait and lameness.

Article 7.X.13.

Farriery and harnessing

1. Farriery

Equids are shod for two main reasons; to prevent hoof wear and to improve performance. Many equids cope well without shoes and, if they are coping well, most are best unshod. However, poor hoof care and farriery predisposes the working equid to injury and infection, and can result in changes to the size, shape and function of the hoof. Untreated abnormalities of the foot can create long term problems in other parts of the leg due to change in gait and weight bearing. Such problems could affect:

- a) Conditions of the hoof wall and horn producing tissues: hoof wall defects, such as cracks that involve the sensitive tissue; laminitis, laminar tearing (local, due to hoof imbalance), separation or inflammation of the sensitive laminae from the insensitive laminae; abscess formation; contusions of the hoof causing bruising or corn formation; neoplasia, and pododermatitis (thrush or canker).
- b) Conditions of the third phalanx: third phalanx problems include fractures of the coffin bone, deep digital flexor insertional tendiopathy, pedal osteitis (generalised or localised inflammation of the bone), and disruption of the insertions of the collateral ligaments, cyst-like lesion formation, and remodeling disease.
- c) Conditions of the podotrochlear region: these include distal interphalangeal synovitis or capsulitis, deep digital flexor tendinitis, desmitis of the impar (distal navicular ligament) or collateral sesamoidean ligaments, navicular osteitis or osteopathy, and vascular disease of the navicular arteries, and navicular fractures.

These conditions are all characterised by pain that can be localised to the hoof (Turner, 2013).

Outcome based measurables: physical appearance, lameness.

2. Harnessing

For the purpose of this chapter, harnessing includes all parts of the driving harness, saddle, bridle and bit. They work to; control the working equid, act as a braking system when pulling a cart, hold loads in place and transfer power to attached carts or agricultural implements.

A properly designed, well-fitted and comfortable harness allows the working equid to pull the equipment to the best of its ability without risk of injuries. A poorly designed or ill-fitted harness can cause injury and discomfort to the animal as well as inefficient transfer of power from the animal to the implement or cart and can also be a danger for the handler and other road users.

Annex XIV (contd)

There should be enough clean padding on harnesses so the animals do not have to work with open sores.

A good harness; does not have sharp edges which could cause injury to the equid, fits well so that it does not cause wounds or chafing caused by excess movement; is smoothly shaped or padded so that loads imposed on the equids body are spread over a large area; and does not impede the animal's movement or normal breathing or restrict blood supply. Good harnessing also maximises the efficiency of transfer of draught energy from animal to load so that minimum effort is required by the equid.

Bits should be ideally of a simple type (such as a straight bar snaffle), depending on work, but should always be smooth, appropriately sized for the equid and kept clean. Inappropriate materials such as thin cord or wire should not be used as bits or to repair bits.

Wounds caused by poorly maintained or inappropriate harnessing are common in working equids and attention should be paid to prevention of harness related injuries. (Pearson *et al.*, 2003).

Outcome based measurables: lesions at sites of harness abrasion including abrasion of eye area associated with blinkers, lesions at lip commissures or other parts of the mouth associated with biting; lesions on tail, hindquarters, hind limbs or hocks associated with contact with cart.

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