Czech University of Life Sciences Prague

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Diploma Thesis

EQUINE WELFARE CERTIFICATION FOR RIDING SCHOOLS

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Declaration

I declare that I have worked on my diploma thesis "Equine Welfare Certification for Riding Schools" by myself and I have used only my personal experience and the sources mentioned at the end of the thesis.

In Prague, ……………………………

……………………………
Bc. Lucie Barešová

Equine Welfare Certification for Riding Schools

Welfare certifikace pro jezdecké školy

Summary

The concern of the animal welfare is increasing especially in developed countries. Although mainly is animal welfare issue connected with farm animals and a food safety the importance of animal welfare in zoos, laboratories, wildlife or companion animals is seen too. Horses as animal species are considered both farm animal and companion animal. Their utilization varies broadly from industry, agriculture, transport or military, to sport activity and leisure. According to data from FAOSTAT statistics in 2013 there were 58 million of horses in the world. From the economic perspective the horse industries have the most significant impact on the economies in the EU and in the US.

Equestrian sport is enjoying higher popularity every year, for example in the EU the number of horse riders increases by 5% annually. Unfortunately, available information are diverse on the equine riding market and no existence of customer guidelines if deciding where to go to learn horse riding. The objective was to define customers' willingness to pay for one hour riding lesson if the riding school is certified as "welfare friendly". Equine Welfare Certification was analysed from the economic perspective to ensure the rides about riding school welfare guarantee.

Key words: equine welfare, animal welfare legislation, certification, contingent valuation method, regression, consumer surplus

Souhrn

Zájem o dobré životní podmínky zvířat se zvyšuje a to zejména ve vyspělých zemích. Ačkoliv welfare zvířat je především spojováno s hospodářskými zvířaty a bezpečností potravin, význam dobrých životních podmínek zvířat v zoologických zahradách, laboratořích, i volně žijících živočichů a zvířat v zájmových chovech, roste také. Koně, jako živočišný druh, jsou někdy považovaná za hospodářská zvířata a jindy za zvířata společenská. Využívají se totiž jak v průmyslu, zemědělství, dopravě či vojenství, tak také ve sportu či volnočasových aktivitách. Podle údajů ze statistiky FAOSTAT v roce 2013 bylo na světě 58 milionů koní. Z ekonomického hlediska má jezdecký průmysl nejvýznamnější vliv na hospodářství v EU a v USA.

Každý rok se jezdecký sport se těší větší popularitě. V EU se počet jezdců ročně zvyšuje o 5%. Bohužel na jezdeckém trhu je vysoká asymetrie informací a neexistují žádné standardy, podle kterých by se zákazník rozhodl, když si vybírá, kam se jít učit jezdit na koni. Cílem této práce bylo zjistit, zda je zákazník ochoten zaplatit více než je obvyklá cena na hodinovou lekci na koni, pokud jezdecká škola bude certifikována jako poskytovatel "dobrého welfare". Spolu s posouzením jezdeckého průmyslu a právních předpisů o ochraně zvířat je zvažována možnost zavedení " welfare certifikaci jezdeckých škol".

Klíčová slova: welfare koní, zákony na ochranu zvířat, certifikace, metoda kontingentního oceňování, regrese, přebytek spotřebitele

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1.   Introduction

The issue of animal welfare is often connected to farm animals and food safety. Clearly from economic perspective farm animals are just a source of food for humans, a form of capital. Importance and value of each piece is derived from its contribution to final output – their productivity. Humans treat them in the way to gain as much of output as possible. But humans do not live in a world fulfil just with economic values, our society revere moral codes and ethical presumption that highlight other values of the surrounding world. All values in the world are derived from human preferences and in animals is a hidden value or 'non-use value', which may be seen just by a part of human society but that does not take its importance. (McINERNEY, 2004)

In some of our societies the concern about animal welfare is entirely plausible. The perceived benefit from believing that animal are treated appropriately is valued, even if animals are used further for economic purposes. And although consumer do not demand animal welfare products directly the influence of a media scandal which gives bad publicity about some specific topic may drastically reduce consumer demand caused by "feel of a lost value" or discomfort. (NIELSEN, AMER, & OLESEN, 2008)

The feel of moral responsibility to sentient beings which deserve respect build our attitudes to this topic. The survey 'Attitudes of EU citizens towards Animal Welfare' (2007), demonstrated high interest in animal welfare standards and demand for more information. The clearest findings shown that EU citizens put high importance to animal welfare and in order to buy more animal welfare friendly products people are willing to change usual place of shopping or generally their purchasing habits. (EC, 2007a; SANSOLINI, 2011) Similarly 95% of US citizens confirm that they concern if animals are well cared of and for 69% is animal welfare significant factor in food choice. (AWI, 2014)

Humans utilize animals in many ways not only for food production, but as well for work, sport, recreation or leisure. Horses play all of these roles and accompanying humans for thousands of years. They were by our side in wars, in hard work on field, in mines or forests, for centuries were the only way of faster transport. People were using horses without paying anything back, they took them from their natural environment and transported them in completely new one. There were horses used in wars or for work and when they had not need them anymore they let them wild. But horses have adapted to new environments and

prospered well, as mustang in the US or brumbies in Australia. Later humans found out that there are too many of these wild horses and have started to catch them or shoot them down. (BAREŠOVÁ, 2014) On the other hand domesticated horses do not coupe with new environment so well, they suffer from degenerative lameness, respiration problems, allergies and metabolic problems, which are not known in case of wild horses. In addition the average lifespan of domesticated horse is just a proportion of those who live in wild. (STRASSER, 1998) Therefore the improvement of equine welfare should be assure especially if horse are used for pleasure.

At the present time the world horse population was estimated on 58 million of which about 60% are used for work mainly in developing countries. (MURRAY, MUNSTERMANN, & LAM, 2013) However, most of the horse population in developed countries are used as animals for leisure. Equestrian sport has become more popular worldwide. New markets and opportunities are appearing for example in China or Argentina, where mainly racing or show-jumping industries grow around 20% every year. The biggest horse industries are in the EU and the US and they have similar impact on their economies over $100 billion annually with increasing trend. So to ensure the welfare standards in horse riding industries should be natural. Unfortunately the opposite is true. In same terrible cases of cruelty the behaviour is commonly recognized as wrong and people tries to diminish it by legislation, regulations or punishment. But sadly the biggest problem according to Mgr. Světluše Bodoková (2007) can be called "professional blindness". Breeders, farmers, riders, trainers, veterinarians and other professionals are used to see thing so often that they do not have a feel there is something wrong, they consider it as "normal". To make a meaningful improvement the regulation, legislation, new technologies nor standards are not enough. There is clearly a necessity of change in people minds, in a way of thinking and way of approaching by everyone who is in contact with animals.

To evaluate what are appropriate welfare conditions is hard and in the EU there is no common nor certificate to help. In the UK there is a certificate called Freedom Food and in France Label Rouge, in the Czech Republic may be consider BIO label as certificate guarantee animal welfare. But specialized measurements for equine welfare do not exist in these days. Therefore Sofie Viksten (2013) has developed the Equine Welfare Assessment Protocol, which may be used for the purpose of improving legislation, as well as feedback for horse owners or for certification in the whole EU.

Further use of this Protocol may be planned. In this thesis is suggested that it may be use as criteria for evaluating riding schools suitability to obtain the "Equine welfare certificate". It is known that a high number of customers are deciding where to go to start to learn horse riding, but due to diverse information in horse riding market customer may be harmed financially, physically and mentally. The low-quality product of services are traded even though consumers prefer and value the high quality. (STRAUSZ, 2004) Several mechanisms, as reputation, advertising, warranties or certification, generally helps to consumer to observe the difference in quality of product or services. The certification works better, because it is based on independent party. (MYSLIVEČEK, 2008)

In the analysis of chosen elements of equine welfare from author (2012) have been proved that keeping horses in "welfare friendly" conditions may lower the cost of keeping by 43%. From this information we could suggest that farm which choose to keep horses in welfare friendly condition may have competitive advantage, not just in lower cost, but as well they may offer to their customers a guarantee of well-being of their animals. To prove that a new certification would have to be implement.

2. Objective and Methods

The objective of this thesis is to define customers' willingness to pay for a horse riding service provide under equine welfare certification program. In the theoretical part the thesis focuses on an amplification of authors findings from Bachelor Thesis: The analysis of chosen elements of equine welfare, where was proven that to provide welfare friendly condition may decrease cost of horse keeping. This advantage may be further use in the concept of welfare certification. Therefore, the overview of current situation in horse industry and animal welfare legislation in selected countries is given in order to choose the most suitable location for equine welfare certification program.

By using the Contingent Valuation method the effect of recommendation or certification on customers' willingness to pay (WTP) for one hour of riding lesson was determined. The collection of primary data were obtained from questionnaire survey. Statistical techniques were employed to analyse the results of the Contingent Valuation in order to obtain exact value of customers' WTP. Variables influencing respondent's decision were set up as follows: attitude, age, gender, level of education, and average monthly

income. Based on findings a theoretical abstract example of a cost of certification for farms was calculated according to real price of the welfare certification, BIO label. Further the consumer surplus was quantified.

3. Theoretical part and literature review

By analysing available existing literature and internet resources no similar research connected to equine welfare certification of riding schools, centres nor stables have not be found. Equine welfare certification is offered to individuals in form of a course, but not to an organizations providing riding services. Many scientific researches, papers and articles have been written in relation to farm animals' welfare, or breeding industry if connected to horses, mostly using the contingent valuation method to quantify animal welfare value. Certification from third independent parties such as Animal Welfare Proved, Global Animal Partnership, Food Alliance, Certified Humane and many others are common mainly in US and in majority connected to food production. Although the horse industry has big economic, cultural, emotional and social importance in many countries data availability are particularly low.

3.1. Animal welfare – definitions

The term "animal welfare" is used broadly in many meanings and context. The word welfare is often explained as well-being, health or happiness. The understanding is changing with the professional point of view, with time, with development of technologies and science, with cultural or ethical background etc. Modern world recognize that animal welfare is not just in terms of body, but mental well-being too. As written by Bousfield and Brown (2010) "*Animal Welfare is however, not only about ensuring an animal is not treated cruelly or caused unnecessary pain or suffering, it is about ensuring that an animal's physical state, its mental state and its ability to fulfil its natural needs and desires are considered and attended to.*"

In the definition of American Veterinary Medical Association (AWMA) is said that "*Animal welfare means how an animal is coping with the conditions in which it lives.*" From this point of view human are responsible for all aspects of the animal welfare especially the conditions which are kept in. To say what conditions are satisfactory the animal "*is healthy, comfortable, well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress.*" But this definition cannot say how these conditions should look like, people have different values and experiences and also there are various means of measuring animal welfare, including (but not limited to) health, behaviour, productivity, and physiological responses.

As the definitions above suggest that animal welfare includes state of body as well as their feelings (fear, frustration). Caroline J. Hewson (2003) pointed out that feelings-based approach to welfare research has several ways how to see the outcome. Firstly thus the feeling have evolved to protect the animal´s primary needs if an animal feels well it is prospering well. Secondly measuring the willingness to "work" and observe the signs of fear or frustration which led to the conclusion that animal behavioural needs must be allowed. And third point of view stressed out that if animals can live according to their nature and perform their full range of behaviours they prosper the best. The meaning is that some physical suffering as feeling cold or mental suffering as the fear may be acceptable. The "natural living" approach have been preferred by the general public however the conflict between three aspects of animal welfare: physical, mental and natural is and always will be a practical, economical and ethical challenge.

"*The most widely accepted definition of animal welfare is that it comprises the state of the animal's body and mind, and the extent to which its nature (genetic traits manifest in breed and temperament) is satisfied.*" (HEWSON, 2003)

The well-known concept of five freedoms coming from the Brambell Report, December 1965 is the framework for animal welfare protections all over the word. Of course there are many discussion about how deep to respect these freedoms and exact meaning of each freedom.

The Five Freedoms are following:

"1. Freedom from Hunger and Thirst - by ready access to fresh water and a diet to maintain full health and vigour.
2. Freedom from Discomfort - by providing an appropriate environment including shelter and a comfortable resting area.
3. Freedom from Pain, Injury or Disease - by prevention or rapid diagnosis and treatment.
4. Freedom to Express Normal Behaviour - by providing sufficient space, proper facilities and company of the animal's own kind.
5. Freedom from Fear and Distress - by ensuring conditions and treatment which avoid mental suffering." (FAWC, 2009)

Looking at animal welfare holistically this topic is related to food safety and security, human and animal health, rural development, sustainability, and the environment. (WSPA, 2009) Therefore animal welfare can be seen as a tool generating benefits to producers, their animals and all citizens generally. The animals are living beings with feeling and ability to suffer, they are used by man and so they deserve protection, care and attention.

3.1.1. Horse: Livestock or Companion Animal

Traditionally have been horse considered as a livestock animal serving the purpose of transport or farm work. With the evolution of human society and technologies horses have lost their role and got involve more in free time activities as racing, recreational riding etc. Are horses still livestock or have they become companion animals? The American Society for the Prevention of Cruelty to Animals (ASPCA[1]) defined a companion animal as *"domesticated or domestic-bred animals whose physical, emotional, behavioral and social needs can be readily met as companions in the home, or in close daily relationship with humans."* ASPCA further specifies that between suitable species to be companion animals except dogs, cats, rabbits, ferrets, birds, quinea pigs, selected small mammals, small reptiles

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[1] ASPCA is a non-profit organization presenting the first organization fighting against the cruelty towards animals since 1866. This New York's organization has a mission "to provide effective means for the prevention of cruelty to animals throughout the United States". (http://www.aspcapro.org/about, 2014)

and fish, belongs as well horse. However, in US most of the governmental agencies, associations and interest groups, as for example the American Veterinary Medical Association, National Animal Identification Act, or Missouri Horse Council, persist that horses are livestock. (BLOCKSDORF, 2012)

To make such a decision whether is horse a livestock or not several point of views should be considered, because it has an impact to a human society. It has to be considered the legal, economic, moral and ethical side as well as the welfare of the horse itself. Speaking about the situation in US the biggest economic issue is if horse should go to slaughter or not, as companion animals horses would not be part of the food chain. Furthermore many benefits of keeping horses as livestock would disappear. Especially horse owners who make their livings as trainers, breeders, dealers or they run boarding stables or schools, may lose the advantages of farm tax exemptions. The government funded research into equine diseases, vaccines and husbandry would be threaten, because similar issues connected to companion animals is mostly privately funded. New laws to protect horses and specify the living condition would be required. If horse is classified as companion animal the influence is seen in all horse activities as rodeo, racing, dressage, western riding, driving, jumping, but as well in meat industry. As a companion animal would have the welfare of a horse bigger importance and some activities, rodeo for example, are not consider as welfare friendly. (AAEP, 2001; BLOCKSDORF, 2012)

Whether is horse a companion animal or not cannot be decide here, but according to legislation review, done further in this thesis, there was not found any state where horse is consider as companion animal. Anyway the treatment of horses should follow at least the level of welfare standards as the one for cattle and other livestock if not higher.

3.1.2. Equine Welfare

To evaluate equine welfare is very challenging and it needs a mix of animal based and resource based measures. Resource based measures assess the condition of resources which are available to the horse, such as the quality of hey or how clean is their water. Animal based measures are evaluating the state of animal, such as hoof and body condition, or presence of injuries in the mouth cause by bits. It is not very often seen a lot of animal based measure in current protocols. The PhD student at the Swedish University of Agricultural

Sciences, Sofie Viksten pointed out at the 2012 International Society for Equitation Science conference that the current legislation is not always research based in most European countries. *"Legislation also has a lot of gray areas, like mental health, natural behaviors, and how the horse is used and how that can affect its individual welfare."*

Therefore Sofie Viksten have started to work on new protocol for regular assessments of horse welfare, which would alert the owners of possible welfare issues and offer ways of improvement. She ran a pilot test with focus on four main areas: good feeding, food housing, good health, and appropriate behavior. Sometimes horses had good health and body condition but test shown some "unexpected" welfare issues as aggressive behavior, marks form bits, mild lameness[2] or insufficient barn ventilation. These results underlined the need for such a protocol offering a good welfare feedback system. This year the final version of the protocol is expected and it could be beneficial for insurance companies, official legislation, or a welfare certification system for stables and riding schools. (VIKSTEN, 2013)

The factors influencing equine welfare were defined, discussed and evaluate in the thesis about equine welfare written by author (BAREŠOVÁ, 2012). Briefly about five main factors which were chosen: Boarding, Hoof care, Nutrition, Sport Career and Training.

The importance of as natural condition for living as possible was underlined and the evidence of damages caused by wrong boarding were provided. The natural environment allows unrestricted movement, fluctuating temperature continually, social life in herd, vast variety of nutrition, mostly head-low body posture, gradually changing body weight, and resting place in open areas. The table 1 below demonstrates the difference between conditions in natural environment and in conventional boarding (stables). From conditions described above is obvious that stables does not provided sufficient boarding environment for horses.

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[2] Lameness or limping is irregular movement of the horse, usually caused by a pain

Table 1 – Conditions in natural environment and in conventional boarding

	Natural Environment	Conventional Boarding
Environmental temperature	Fluctuates continually	Changes abruptly
Movement	Continuous	Restricted (too short, too infrequently) and often unnatural
Lifestyle	Herdlife	Solitary (herdlife impossible)
Nutrition	Vast variety and continuous uptake	Restricted and insufficient variety, set meals
Body posture	Natural, mostly head-low	Unnatural, mostly head-high
Body weight	Changes gradually, actively	Change suddenly, passively
Exposure of hooves to water	Daily	Rare to none
Resting places	In the open	In closed spaces
Presence of grease or oils on hooves	Non-existent	Common
Immediate and direct ground contact of hooves	Always	Rarely
Clothing & protective wear	Non-existed	Common (leg wraps, blankets, bandages, etc.)

Source: Strasser, A lifetime of soundness, 1998

Generally two practices of hoof care are distinguished: bare hoof trimming or shoeing. In the welfare point of view both are trying to provide as much comfort to a horse as possible just from two different aspects. For trimmers is the most important to provide the healthiest form of life (movement, growth of horn, risk of injuries) which is bare hoof. For ferries is the utilization of a horse the most important and in the case of problem the immediate removal of pain is chosen. In this factor is hard to decide which practice is more welfare friendly due to different approaches of different professionals.

The basic for all horses in nutrition is clean fresh water, good quality pasture or hey and access to minerals, vitamins and salt. The movement and natural routine of feeding are very closely linked.

The sport career does have big influence on a horse welfare, but it is very subjective factor to evaluate. There are two main groups involved in horse competitions: one, who cares about horses welfare and second, who do whatever it needs to win. Because this paper is focus on recreational horses welfare this factor is not essential.

The way how are horses trained has a big influence on horse welfare as well as safety of humans. There are methods which respect anatomical limits of a horse and use positive reinforcement method to have a horse which is performing with pleasure.

This conclusion of this thesis sum up that even though the welfare factors do not influence the value of a horse providing "welfare friendly" condition decrease significantly costs of the farm. (BAREŠOVÁ, 2012)

Is highly expected that new protocol from S. Viksten will include similar criteria for influencing factors of equine welfare as were mentioned above.

3.2. Horse industry overview

The variety of utilization is changing over the period and development of society from provision of meat, leather and milk, from transport, help in agriculture, recreation or sport to therapeutics or military purposes. Nowadays are horses valued at several levels economic, cultural, social and individual. The development of horse population since 1963, shown on graph 1, is closely connected to their utility. One of the main period of horse population decrease was mechanization of transportation and agricultural technologies, several economic crisis and more. Recently horses can be found all over the world, except Antarctica, and its population is estimated at 58 million.

Graph 1 – Number of horses in the world 1963 - 2013

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014, data source: database FAOSTAT (2014)

About 60% of horse population are working horses mainly in developing countries and a significant part of the rest represent horses in the racing, equestrian or recreation industries. (MURRAY, MUNSTERMANN, & LAM, 2013) Generally say the availability of horse industry statistics is very law and estimated data form several sources can differ dramatically. That´s why serves this overview just for approximate orientation in horse industry over the world.

Horses are distributes unequally on the continents, see graph 2. Over a half can be found in Americas, almost a quarter in Asia, similar about in Africa and Europe and not even 1 percent in Oceania. The top 5 countries are USA, Mexico, China, Brazil and Argentina. If EU would be considered as country in would be placed just after Brazil.

Graph 2 – Horse population by continent in 2013

HORSE POPULATION BY CONTINENT

Europe 10,0%
Oceania 0,7%
Africa 10,6%
Asia 23,8%
Americas 55,0%

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;
data source: FAOSTAT 2014

Detailed information about horse industry in countries with largest population of horses in the world were described, including the European Union as an exception due to its size, and Canada. Huge part of horse industry in Mexico, Brazil and Argentina is formed by meat industry which is not interesting for purposes of this paper. Historically, Argentina and Brazil were the biggest producers of horsemeat, since the early 1970s the production decreased significantly. The majority of production is going for export, mainly to the European Union, because the local market is limited. The berries are often caused by non-sufficient animal welfare legislation. But nowadays are Argentina and Brazil known as well as horse breeding countries with developing equestrian sport industries.

U. S. A.

According to FAOSTAT statistics in 2013 he highest amount of horses is located in Americas around 32 million from which about 10.3 millions are found in the USA. The development of horse population in the USA is demonstrated on the graph 3 below.
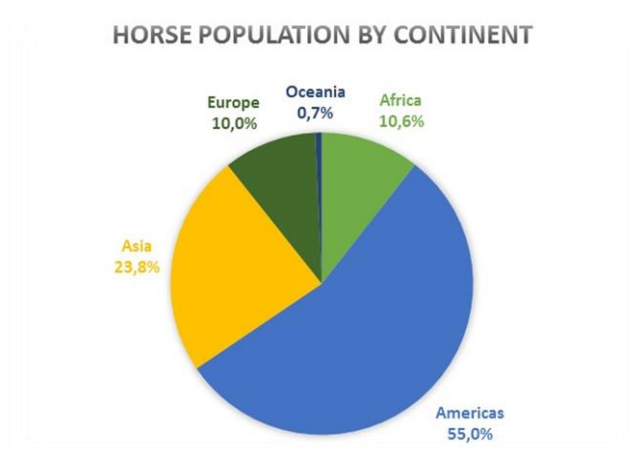
Graph 3 – Number of horses in the US in 1983-2013
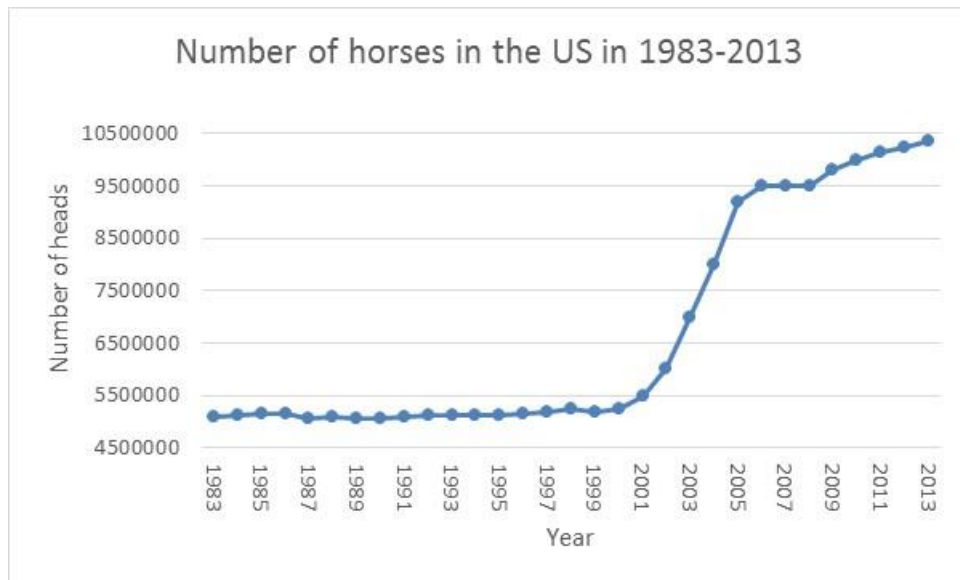
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)

American Horse Council estimated in 2005 that from 9.2 million of horses found in USA in that time 3.9 million are used primarily or exclusively in recreation industry. Unfortunately updated data have not been found, but counting with the same ratio there are 4.3 million horse in recreation nowadays. There are 4.6 million of Americans involved as horse owners, service providers, employee (10%) or volunteers. The direct effect on the U.S. economy of horse industry has been calculated on $39 billion annually whence $11.8 billion come from recreational horse industry. The overall impact including the multiplier effect of spending by industry suppliers and employees is $102 billion from which $20.1 billion are generated in recreation industry. In the case of recalculation with the spending of spectators this impact would be even higher amount. Annually the horse industry brings about $1.9 billion in taxes to all levels of U.S. government. (AMERICAN HORSE COUNCIL, 2005) Although the data provided are from the year 2005 the significance of recreational horse industry in U.S. is obvious.

EUROPEAN UNION

Around 70% of all world's equine events are held in Europe. Due to Europe's strong equine history and tradition the equine sport belongs among the most popular leisure activities. (EUROGROUP FOR ANIMALS, 2014) In the European Union (EU) has horse industry economic importance to all 27 member states. Even though the number of horses in 2013 in the region is estimated to 3.6 million (FAOSTAT, 2014), about the third of US population, the impact on the EU economy is about on similar or even higher level of $128 billion annually. The development of horses' population in the EU is shown on graph 4 below.

Graph 4 – Number of horses in the EU in 1983-2013
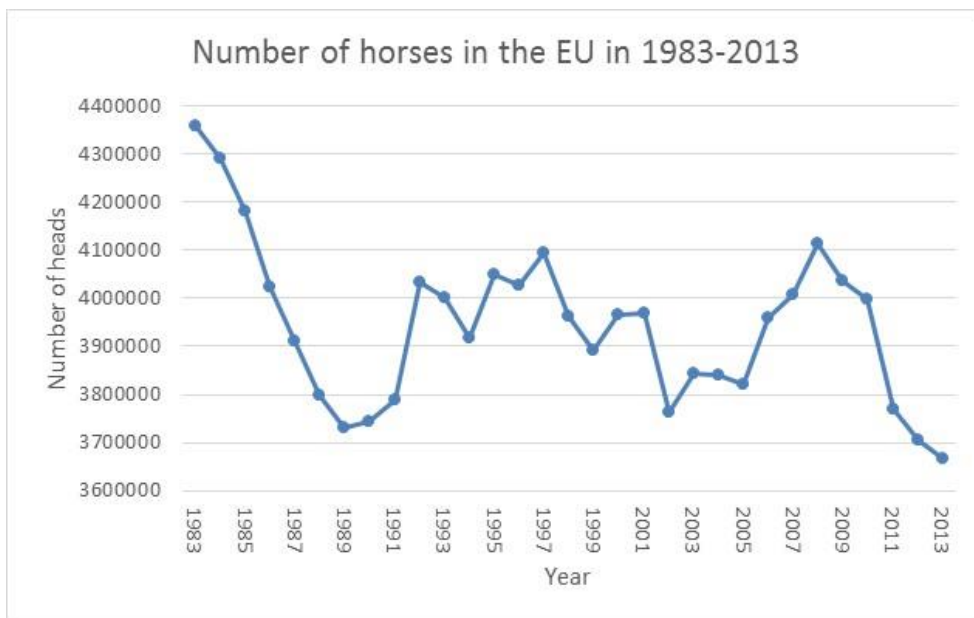

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)

The sector is providing 400.000 full time job equivalents. The number of horse riders grows every year by 5%. (MURRAY, MUNSTERMANN, & LAM, 2013)It can be explained that in these countries people are willing to bet significant amount of money on horse racing as well as pay high amount for horse treatment. Or there is an opinion that there are over 6 million of horses in the EU, which can be considered as true, because there are always unregistered horses which are not find in the statistics. In both cases this industry is

bringing 5 billion euros of taxes to different governments and its significance is very strong (EHN, 2010)

CHINA

Although the size of horse population in China has long-time downward trend (as shown on graph 5 below) and nowadays there are about 6.3 million of horses. (FAOSTAT,2013) The importance of Chinese horse industry is growing well and it is showing a great potential. The competition history in China is not long, the first commercial race was held in 1990. During last fifteen years high quality warm bloods, more suitable for equestrian competitions, where imported in larger quantity (VAN MOORSEL, 2010) and in 2012 the China National Equestrian Team was founded. The industry in 2012 attracted total investment of the amount of $18.9 million. The recreational horse industry market size is less than $1 billion, but the annual growth rate is more than 20% that is why it is considered to be a sunrise industry. (HOFRA, 2012)

Graph 5 – Number of horses in China 1983 - 2013

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)

BRAZIL

There is lack of information about horse industry in Brazil which has the fourth largest herd in the world estimated at 5.43 million of heads in 2013. (FAOSTAT, 2014)

Graph 6 – Number of horses in Brazil in 1983-2013

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)
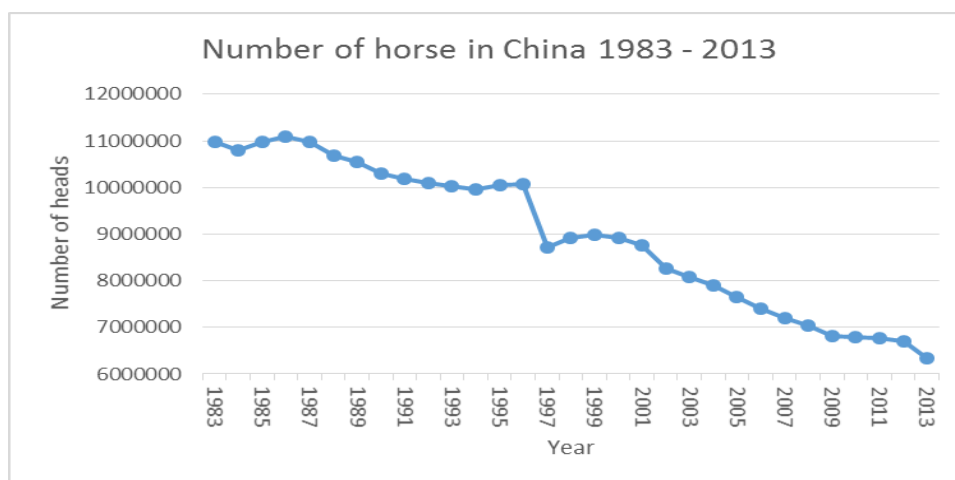
The video on youtube.com shows report from CCTV's Lucrecia Frango, where involved professionals mentioned few important facts. There are over 6 million horse in Brazil and thoroughbred breeding has become one of the most successful business in this country. The horse industry generate over $3.5 billion annually from which 30% is created by race industry. Since late 1990's the average increase is 20% a year, because the role of horse changed in Brazil. (FRANGO, 2013)

Since 2002 the FEI group of South America work together to enhance equestrian sport in the region. More opportunities for competing in different countries with less difficulties are necessary for successful development, because the Equestrian Federation of Brazil has limited resources and availability of marketing and distribution channels for horse-related products. (CANADIAN WARMBLOOD, 2003)

The Argentina's horse industry is strongest in South America, the Federation Ecuestre Argentina (FEA), its International FEI body, is well-established, well-organized and is offering all necessary for FEI disciplines. Argentina is well-known in horse breeding industry as leader in artificial insemination and embryo transfer technology. In 2003 the ´Agenda Ecuestre Argentin´ was written into law because the horse industry was recognized as very important to the rural economy. The great reputation for breeding thoroughbreds and Standardbreds for racing and polo make this country the world's fourth largest producer. (CANADIAN WARMBLOOD, 2003) The size of horse population in Argentina is growing steadily, the biggest booms were in 1988 were the number of heads increased from 2.9 million to 3.4 million in 1990 and in 1998 when the numbers raised from 3.3 million to 3.6 million in 1999. According to FAOSTAT data the level of horse population stayed stable until now as shown on the graph 7 bellow.

Graph 7 – Number of horses in Argentina 1983 – 2013
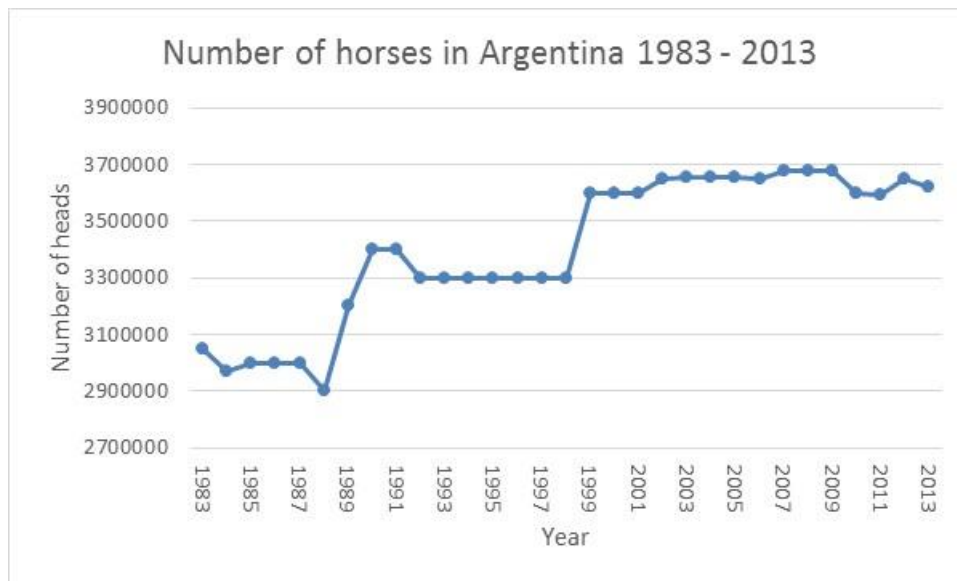
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)

According to data from Equine Canada and authored by Vel Evans of Strategic Equine Inc. (2010) the impact of the Canadian horse industry on its economy was more than $19.7 billion annually. Since 2003 there was significant increase from $15.8 billion. The federal and provincial taxes and levies on horse racing wagering brought plus another $300 million. Estimation of horse population in 2010 was calculated to 963.500. The number of horses according to FAOSTAT (2014) are almost not changing in Canada last twenty years and except two peaks in 1988 and 2001 the size of the herd was around 400.000, as is demonstrated on the graph 8 below. The key priority nowadays for long-term sustainability of the industry and its growth is attracting new participants and revitalizing the customer base. (EQUINE CANADA, 2010)

Graph 8 – Number of horses in Canada in 1983-2013
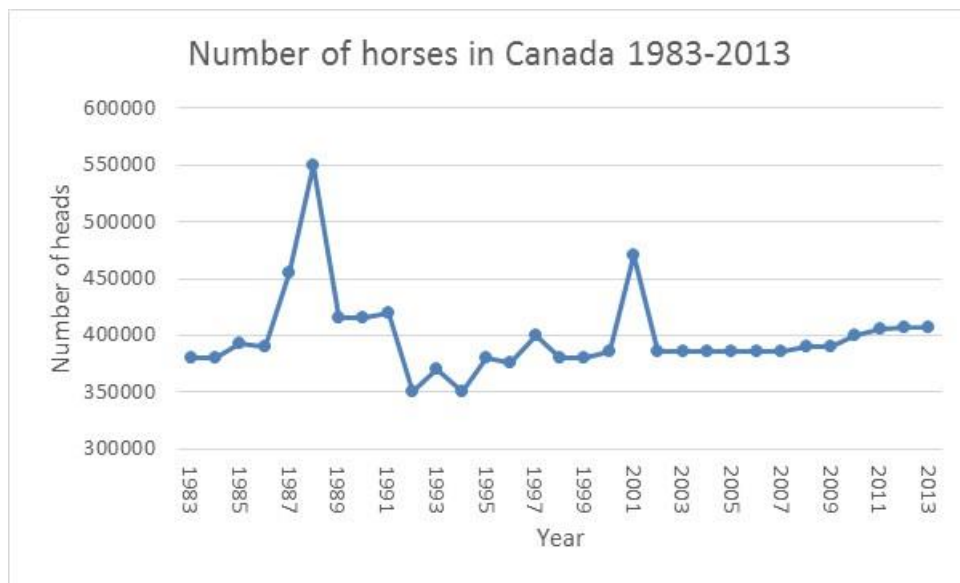
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)

The horse population in Mexico was 6.35 million of heads in 2013 according to FAOSTAT database. The trend is slowly increasing already since 1983 and the total growth in 30 years period is 200 000 horses as shown on the graph 9 below.

Graph 9 – Number of horses in Mexico in 1983-2013
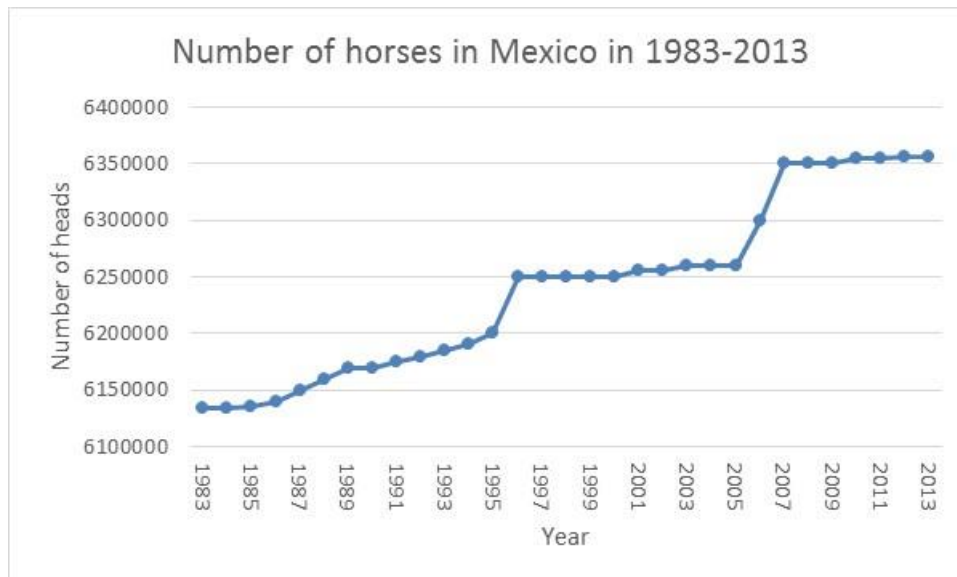
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: database FAOSTAT (2014)

Unfortunately there are very limited information about horse industry in Mexico in English language. Majority of papers or news are connected to cruelty at Mexico's slaughter houses, which is not in interest of this thesis.

3.2.1. Riding schools in the European Union

In many countries of the EU riding as a hobby is strongly associated with young women, majority at the age between 13 and 18 years old. An average proportion of women and men in riding schools is 75% women and 25% men. The possibility to learn riding at riding schools is offered in almost all countries of the EU. The number of riding schools or riding clubs in total is nearly 15 000, majority placed in Germany. More details about the

number of riding schools and the cost of one hour riding lesson are shown in table 2 below. (LILJENSTOLPE, 2009)

Table 2 - Statistics of number of riding schools and costs of a riding lesson

Country	Number of riding schools	Price for 1hour riding lesson in Euro
Austria	1400	15
Belgium	1310	10
Czech Republic	94*	10-20
Finland	800	30
France	4038	12
Germany	7500	15
Great Britain	600	45
Ireland	130	25
Netherlands	400	20-30
Slovenia	71	12-25
Spain	592	15-30
Sweden	1000	14

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: LILJENSTOLPE, Horses in Europe, 2009; and data with *: www.cjf.cz, 2014

The positive effect on children who regularly handle horses is proved by several studies. Children mature faster and work on their courage and initiative. For young girls it is a way how to develop and strengthen their identity. (LILJENSTOLPE, 2009)

Available data on the percentages of the horse riding participants estimates that in the Netherlands it is 3%, in UK 5%, in France 1.7%, in Germany 2% and in Austria 2% of the population. Applying these percentages to the whole EU the number of people practising horse riding would be between 1.7% to 5% of the EU population. (VAN DER SMAN, VAN MARLE, ECKHARDT, & VAN AKEN, 2003)

3.3. Animal welfare legislation in the world

Globally is animal welfare often discussed topic commonly connected with ethics and moral values. Videos or photos of animal suffering are shown to public every day to express the necessity of this interest and the importance of the protection of animal welfare. Even though the interest of people is growing steeply in the last decades still is essential to ensure animal welfare by effective implementation and enforcement of legislation. However the level of state protection varied significantly from state to state and from continent to continent. Adding of restriction, regulations, standards or recommendations are extended procedures how to improve or specify the legislation. (Barešová, 2014) To analyse the animal welfare legislation is not simple, because the concept of animal welfare itself and different levels of human perception how to judge it. Mostly there are legally given minimum standards and all above are advisory recommendation. (DA SILVA, NÄÄS, & DE MOURALI, 2009)

Nowadays, over 100 countries have passed different laws on protection of animal welfare, which can demonstrates the respect for animals as well as the understanding of connection between the food safety of animal derived food and animal welfare. Especially the farm animal welfare is crucial issues in topics of international trade, human health or the environment protection. (YOU et al, 2014)

An attempt to add a worldwide framework is the Universal Declaration on Animal Welfare (UDAW) which was formulated by World Animal Protection to propose it as an inter-governmental agreement to recognise animals as sentient beings, prevent cruelty, reduce suffering, promote standards on animals welfare and point out that animal welfare topic is an issue of worldwide importance as a part of social development. A foundation text was agreed in 2003 and the new draft was proposed in 2011 which included suggestion from UN Members States. The UDAW is a non-binding set of principles that encourage and enable national governments to introduce or improve animal protection legislation and initiatives, supported by United Nations (UN), the World Organisation for Animal Health (OIE), Commonwealth Veterinary Association (CVA), Federation of Veterinarians of Europe (FVE) and others.

One of the biggest international player in this field is World Organisation for Animal Health (originally the Office International des Epizooties - OIE) which was established in

1924 by 28 countries, had as the main goal fight against animal diseases. It has been based in Paris and OIE become the leading international organisation for animal welfare at the request of its Member Countries. Nowadays there are 180 members involved and OIE had signed agreements with most of the word organisations involved in this topic as FAO (1952), EU (1957 – with EC), WHO (1960), IICA (1993),WTO (1998) etc. The main objectives remained, some others accrue as Food safety and Animal welfare which was identified as priority the first time in the OIE Strategic plan 2001-2005. (OIE, 2014)

The development of animal welfare standards in OIE is carried out through the work of expert *ad hoc* Groups that write down a draft text for the OIE Terrestrial Animal Health Code (TerrestrialCode). The draft text is reviewed by the OIE Animal Welfare Working Group which transform it into a recommendation. The Animal Welfare Working Group was inaugurated at the 70th General Session of the OIE in May 2002 and its first recommendations were adopted one year later. There recommendations are provide to the OIE Terrestrial Animal Health Standards Commission (Code Commission). After the reviewing by Code Commission are the draft texts send to OIE Members for two rounds of comment. In the end may be the draft text proposed for adoption and it has to go through the democratic and transparent standard setting procedure. Now the standard need to be approved via World Assembly of Delegates (representing the 180 Member Countries and Territories) that meet every May at the OIE General Assembly.

In 2004 there were the OIE Guiding Principles on Animal Welfare included in the Terrestrial Code. In the same year in February a First Global Conference on Animal Welfare took place in Paris where the OIE´s animal welfare initiative was explained. One year later have been adopted ten animal welfare standards in the Terrestrial Code and four animal welfare standards in the Aquatic Animal Health code (Aquatic Code).

These standards are regularly updated to follow the latest scientific findings and they cover:

- "*Introduction to the recommendations for animal welfare*
- *Transport of animals by land, sea, air*
- *Slaughter of animals*
- *Killing of animals for disease control purposes*
- *Stray dog population control*

- *Use of animals in research and education*
- *Animal welfare and beef cattle production systems*
- *Animal welfare and broiler chicken production systems*
- *Introduction to recommendations for the welfare of farmed fish*
- *Welfare of farmed fish during transport*
- *Welfare aspects of stunning and killing of farmed fish for human consumption*
- *Killing of farmed fish for disease control purposes.* " (OIE, 2014)

In October 2008 there was the Second OIE Global Conference on Animal Welfare in Cairo, where 400 participants from all OIE regions came to speak about the topic "Putting the OIE Standards to Work". The key point of the conference was the identification of the most important tools and needs to implement the OIE standards. In November 2012 was held the Third OIE Global Conference on Animal Welfare in Kuala Lumpur, where main stress have been put on regional specificities and expectations to support the implementation of OIE standards. (OIE, 2014)

Another player which has an influence on legislative framework is the World Animal Protection, until June 2014 known as World Society for the Protection of Animals (WSPA) which help animals all over the world. In 1980s it began lobbying the EU and by the 1990s had been represented at the Council of Europe. Now as the only animal protection organisation is regularly address the UN where in 1981 got a consultative status. (WORLD ANIMAL PROTECTION, 2014)

The International Fund for Animal Welfare (IFAW) was founded in 1969 and it has projects in more than 40 countries. The main objectives are saving individual animals as well as whole populations and habitats all over the world by assistance to animals in need, rescuing animals in the wake of disasters or advocating from cruelty and depletion, the influence of IFAW into legislation is not mentioned anywhere. (IFAW, 2014)

Broadly speaking almost all international organizations connected to food or agriculture are in some way connected with animal welfare. For example the Food and Agriculture Organization of United Nations (FAO) has underneath some animal welfare projects, mostly connected with farm animals. There is a platform called Gateway to Farm Animal Welfare, which serves as a place where to retreat and submit information about this topic. (FAO, 2013) Unfortunately the rules of World Trade Organization (WTO) make no

references to farm animal welfare standards even though the trade policies have significant impact on animal welfare. (SANSOLINI, 2011)

In 1866 in New York City was founded the American Society for the Prevention of Cruelty to Animals (RSPCA) by Henry Bergh. The first concern was about the cruelty to horses, stray cats and dogs, but nowadays the activity is much broader. The only Federal law in United States regulating the treatment of animals exhibited in public, commercial transport, used in research and by dealers is the Animal Welfare Act which was signed into law in 1966. The Animal Welfare Act is the minimum acceptable standard to which refer others laws, guidelines, policies covering specifications for animal care and use. Currently there is a law the Animal Welfare Act with several amendments (e.g. 1985 - Improved Standards for Laboratory Animals Act, 1990 - Protection of Pets, 2007 - Animal Fighting Prohibition Enforcement Act) and the Animal Welfare Regulations. These laws are administered by the U.S. Department of Agriculture, but most of the states has their own local laws and rules. Local legislation address everything from hunting to meatpacking and from pet neglect and abuse to the treatment of circus animals. (AWIC, 2014)

The Horse Protection Act is a U.S. federal law under which is a punishable crime the practice of soring. The soring is a procedure in which are horses subjected to chemical and/or mechanical irritants for the purpose of maintain higher gait and creates unfair advantage over other competitors. The participation of sored horse is illegal on all horse activities as exhibitions, shows, sales, auctions or transport. (USDA, 2013)

The Federal Regulation includes in part 11 Horse Protection Regulations which defines terms used in connection with regulations and specifies Prohibitions concerning exhibitors, scar-rule, inspection and detention of horses, responsibilities and liabilities of management and much more. (GPO, 2014)

The SWOT analysis for US animal welfare legislation have been performed by Schmid and Kilchsperger (2010) as shows table 2 below.

Table 2 – The SWOT analysis for US animal welfare legislation

Main strengths	Main weaknesses
American public is supportive of legal protections for farm animals.	Large-scale political campaigns are very expensive to run in the U.S.
U.S. animal advocacy groups are well organized, well-funded and experienced in executing political campaigns.	The U.S. animal agriculture industry is politically powerful and has the means to stop the passage of legislation, particularly at the federal level.
The state citizen initiative (referendum) process provides a means of passing legislation that may be too ambitious for passage by the traditional legislative route.	The existence of 50 state legislatures makes addressing farm animal welfare through passing laws at the state level a somewhat impractical approach
Consistency in application/ enforcement;	Limited resources;
Provides a recognized mechanism for eliminating "bad actors".	Slow Implementation – Slows implementation of advancements/ improvements determined through research because of regulatory process.
Main opportunities	View of USDA:
Raise public awareness of farm animal welfare concerns.	The vast number of farms in the USA would make inspections challenging. (For example the beef cattle industry alone has nearly 800,000 producers);
Promote humane food labeling programs and thereby increase the number of animals raised under high welfare conditions.	Difficulty in adapting to a variety of systems, e.g. criteria tend to be overly-resource and not animal based (View of US Animal Welfare Institute: this can also be seen as opportunity).
Incremental improvement.	**Main threats**
Harmonize standards among a variety of industry and non-governmental animal welfare programs.	Industry may pass laws to undermine or circumvent farm animal protection legislation. Even though laws are passed, enforcement by the government may be minimal or non-existent.
Potential to stimulate research on issues of interest;	Increased costs (may make Implementation impractical and drive food production to other countries)

Source: selfprocessing, data sourse: (SCHMID & KILCHSPERGER, 2010)

EUROPEAN UNION

In London in 1824 was founded the first animal welfare organization to promote the protection of domestic animals called the Royal Society for the Prevention of Cruelty to Animals (RSPCA). Starting to help "pit ponies" which were working in the mines, later on helping the animals during First and Second World Wars and continuing with pet and farm animals in closer history. RSPCA have been already there to influence forming and improving animal welfare law in 1822 and its influence have not lost until these days. (RSPCA, 2014)

Modern and complete body of norms and regulations dealing with animal welfare have been produced by both the Council of Europe (CoE) and the European Union (EU). Some of the CoE treaties are not ratified only by European countries but as well by non-European once. (CAPORALE, et al., 2005)

There are five conventions since 1968 which have been drawn up.

- *"European Convention for the Protection of Animals during International Transport (European Treaty Series [ETS] 65, 1968), additional protocols to this Convention were passed in 1979 and 2003 (ETS 103 and ETS 193, respectively)*
- *European Convention for the Protection of Animals kept for Farming Purposes (ETS 87, 1976)*
- *European Convention for the Protection of Animals for Slaughter (ETS 102, 1979)*
- *European Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes (ETS 123, 1986)*
- *European Convention for the Protection of Pet Animals (ETS 125, 1987)."* (CAPORALE, et al., 2005

In 1957 when the European Community was established and the Treaty of Rome was signed, animals were considered as 'goods' or agricultural products, that's why their welfare haven´t been taken into account. The Animal welfare appeared in the Treaty of Amsterdam (1997), when the 'binding protocol' on animal welfare was included. But the EU has been implementing legislation for animal protection already in 1970s, mostly it was connected with activities of supra-national nature as transport of animals for trade. Nowadays the EU legislation includes the protection of animals in general as well as the specific measures to

protect farm animal, wild animals, animals used for experimental purposes and conditions for transport, slaughter, killing, etc. (CAPORALE, et al., 2005)

The European consumer is concerned about animal welfare as is shown through EU surveys, public campaigns and the communication between EU institutions and citizens. For example in March 2007 the Eurobarometer survey shown that 62% of European consumers would change their habits in order to buy more animal welfare-friendly products. (EC, Attitudes of EU citizens towards Animal Welfare, 2007a) The consumers are as well aware of the connection between well-being of the animals and quality, even safety, of food. Almost half of survey respondents perceive food that have been produced under high animal welfare standards to be of better quality and nearly 90% said that the same animal welfare standards should be applied to imported goods too. The vast majority (77%) believed that further improvement in the animal welfare protection is needed in their country. (EC, Attitudes of EU citizens towards Animal Welfare, 2007a)

There was the first Community Action Plan on the protection and welfare of animals which helped to provide better clarity, increased understanding and acceptance of the animal welfare policy, but it was not a real strategy. The complementary tools, clear aims and consistency across all other EU policies were missing. (EUROGROUP FOR ANIMALS, 2011) Therefore in January 2012 as a follow-up the new strategy for the Welfare and Protection of animals 2012-2015 have been adopted by the European Commission. The Strategy takes a multi-layered approach under the guiding principle "Everyone is responsible" which includes:

- *"dealing with Europe-wide problems with a set of general principles that will simplify rules and improve enforcement;*
- *improving the training of animal keepers and veterinarians who inspect farms;*
- *supporting EU countries in their compliance with EU rules;*
- *building international cooperation toward improving animal welfare;*
- *improving cons*" (EU, 2012)

And so to make this strategy successful the cooperation of farmers, officials and consumers is needed.

Currently there is no common EU legislation to protect the equine welfare. But in May 2014 there was a meeting of European specialist in equine issue where research project on this topic was lounged. Two leading organisation, the Eurogroup for Animals and the World Horse Welfare, aimed for better protection and harmonisation of the legislative across the EU. The result of this research will be published by the end of 2014 in a form of report with recommendations of equine welfare and possibly legislation. (EUROGROUP FOR ANIMALS, 2014)

China

Mainland China has no comprehensive animal protection law. There is the" Law of the People's Republic of China on the Protection of Wildlife" adopted on November 8, 1988, the first law in China for protection of animals. Unfortunately this legislation consider wildlife as a natural resource and allows reasonable use of wildlife for human benefit. Explained by local authorities this law finally has no protection effects. As example can be mentioned bear farms business which bring huge amount of taxes to the local offices. They are responsible for local development and as such as they need to provide "obstacle free" environment for big business. Therefor there are no expectation to meet environmental or labour standards. Moreover how Peter J. Li, Ph.D. (2012), an Associate Professor of East Asian Politics at the University of Houston-Downtown and China Policy Specialist of Humane Society International said: *"Local businessmen, particularly those businesses that are big local taxpayers, are showered with all kinds of honours. Some of them are "elected" deputies to local and provincial people's congresses. In China, there is no other better way to show support to local businesses than to make them government officials."* Overall there is no legislative way how to punished animal cruelty. (LI, 2012)

Even though traditional religions as Buddhism and Taoism taught to care and empathise with animals the mind-set of Chinese people had changed. Since 1990 is China the world's largest producer of meat, with the largest number of animals in the industrialized farms. The consumption of meat had increase dramatically over the last few decades and in comparison with US the consumption in China in 2012 is more than double. However the quantity is not the issue, but the welfare is. Practises a long time rejected in Europe are still used in China, as "gestation crates, battery cages, ear-clipping, beak-trimming, early

weaning (for calves), castration, tail-docking (for pigs), and forced feeding (ducks and geese for weight gains and foie-gras production)." (LI, 2012)

Even though the political environment is against activism for animal protection there are very active interest groups in China fighting for the animal welfare. They had succeeded in stopping bullfighting project, which should be introduced in China in 2010, and similarly with American rodeo project in 2011. Chinese animal welfare activists demonstrated against the attempt of import of seal meat from Canada, terrifying live animal feeding in zoos for audience entertainment or barbaric bear farm practises. (ROBINSON, 2014)

According to Jill Robinson, the founder and CEO of Asia Animals, more and more young environmentalists are confident to join the fight for animal protection and she sees this trend much faster than in the West.

According to survey "A Survey of Chinese Citizens' Perceptions on Farm Animal Welfare" more efforts are needed to enhance public concern to animal welfare, especially in the connection to the process of establishing animal welfare standards and legislation. Because 72.9% of respondents have never heard of animal welfare and 45.5% are not willing to pay more for high-welfare animal products. And even though 65.8% of respondents agreed, partly or totally, that there is a need of establishing laws to improve animal welfare, majority of them 72.9% is human-centred and see animals as tools. (YOU, LI, ZHANG, YAN, & ZHAO, 2014)

Canada

There are three pieces of federal legislation which provide humane protection for farm animals in Canada. The Criminal Code (Section 446 – Cruelty to Animals) which is enforceable by Police officers and some SPCA - Society for the Protection of Animals inspectors, prohibiting cruelty to animals wilfully or without lawful excuse. This Act was strengthened in 2008. The Health of Animals Act updated in 2010 is specified to protect animals from undue suffering during transport and loading. The enforcement of these Act is done by CFIA inspectors, some SPCA inspectors which are trained and appointed by CFIA, Police officers and B.C. Minister of Transport. The Meat Inspection Act enforceable by CFIA inspectors and Police officers is protecting food animals during handling and slaughter in federally registered slaughter facilities. (FACN, 2013)

No legislation exist to protect welfare of farm animals on the farm. Ethical principles are avoided in the current legislation and it does not deal with keeping, caring nor housing of animals for agricultural purposes. The individual need of different animal species are not taking into account, neither their development, adaptation nor domestication to their ethological, physiological or psychological needs. To apply the basic principle of Five Freedom is not required. There are no existing regulation of the intensive farming system in Canada. (LEVENSON, 2011)

Each province has their own Provincial Animal Welfare Acts. Under these Acts the prosecutions are regulatory not criminal so usually are preferred because under the Criminal Code intent must be proven. There are animal protection legislation in Northwest Territories and Nunavut even though there do not have significant livestock industries. In contrary Quebec´s Act is strongly used for companion animal cases but it is not clear in the cases of livestock. In all others provinces is applied the provincial animal protection laws and regulations to both, companion and livestock animals. Even more the provision for humane protection for farm animals is included in various provincial agriculture and food Acts. The provincial Act is enforced by agencies appointed by government, mostly the SPCA enforces animal protection legislation regarding livestock. In Quebec the enforcement of provincial anti-cruelty laws is conducted by Anima Québec, a non-profit group. Some additional enforcement can be done by the Minister. Police officers are empowered in all provinces to enforce the Criminal Code as well as provincial Acts. (FACN, 2013)

However, Canada cannot be compared to the EU, where national committees with a balance membership of all stakeholders, including animal protection organizations, advise government on animal welfare policy. Current Canadian regulation are much below the recommended standards by OIE and far from the WTO recommends. There is strong agricultural lobby, so most of regulation are there to protect food animal industry. Animals are property and may be treated like machines. Therefore in Canada are still common cruel practices, which have already been banned in the EU. (LEVENSON, 2011)

Mexico

The first step to legislation regarding environment was in Mexico already in 1894 when the legislation for the conservation of wildlife was intended. The first passed law was in 1940 the Federal Game Law. More recently was created the Law for Prevent and Control

the Environmental Contamination in 1972. Most significant law for protection of Mexican environment is law from 1988 the General Law for Ecological Balance and Environmental protection which is designed to protect all species. In 1993 the Federal Law Animal Hygiene established rights for farm and companion animals. (ENDANGERED EARTH, 1999)

From 32 Mexico's states have laws relating to the treatment of animals roughly just 40% and anyway enforcement of the existing legislation is rare. In 2004 was introduced a comprehensive bill covering maintenance, care and housing, use, transportation and slaughter of animal but has not been passed. If the legislation passed there will be less barriers to Mexico's export of livestock products, particularly in the European Union.

Little data are provided to show if animal welfare is a major public concern in Mexico or not. Consequently animal welfare issue is not a priority, but the extent of issues entering public debate is focus on the welfare of companion animals, bullfighting and cockfighting. Academic and professional communities put large pressure for higher welfare standards. That is why a change in broad public opinion may be taken into account in the future. (FARM FOUNDATION, 2009)

Brazil

It is very rare to find an English word on animal welfare legislation in Brazil. Maybe it is because the basic legislation is very old law, the "Animal protection law" from 1934, which is available only in Portuguese and there are hardly any updates. There are new legislation for organic production and livestock based on Law from December 2003 and Decrete from December 2007 and norm from December 2008. So mainly is the animal welfare based on the national constitution from 1988, because there is no detailed legislation for other animal categories except for transport and slaughter. (SCHMID & KILCHSPERGER, 2010)

Even though the legislation for transport and slaughter exist in swine production the highest deficit is in transportation and for poultry production the Brazilian legislation presents a general insufficiency of 58%. To maintain international competitiveness the need to invest in updating animal welfare standards, norms and legislation in Brazil. (DA SILVA, NÄÄS, & DE MOURALI, 2009)

One of the survey to find consumer attitude to animal welfare in Brazil was carried out in 2010. The survey was related to broiler consumption and whether are Brazilian willing

to pay more for chicken meat, because Brazil is the biggest producer of chicken meat in South America. Among the respondents 58% changed their habits and consumed organic, ethical or similar product, 96% agreed that the bird should not suffer, and 79% stated that legal protection during production should be provided to the broilers. It should be mentioned that 70% of respondents consume primary beef meat. The results of this survey is demonstrated on the graph 10 below. (SILVA, et al., 2011)

Graph 10 – Consumer attitude toward broilers' weflare in Brazil
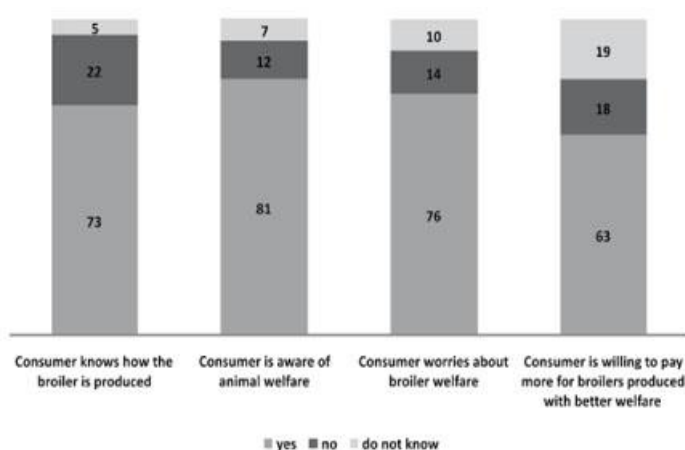
Source: SILVA, et al., Poultry welfare scenario in South America: norms and regulations, 2011

Argentina

The first animal protection organisation in Argentina was founded in 1902. It was called the "Sociedad Protectora de Animales Sarmiento (Animal Protection Society Sarmiento)". The society name Sarmiento came from a former republic president tribute, he formed the first "decreto" about animal welfare topic, because he was concerned about animal abuse and involved in animal protection.

Predominantly is animal welfare in Argentina regulated by legislation for animal protection from 1954. The organic production follow the Legislation for organic production and livestock from 1993 and later the Decrete from 2001. There are several private certification standards which are recognised by the European Union, e.g. Argencert. All animals are covered by legislation, even the issues of transportation, slaughtering. In Argentina are the animal welfare friendly livestock products produced mainly for export. (SCHMID & KILCHSPERGER, 2010)

The first survey in Argentina in 2008 found that 66% of the people think that welfare is an important factor in the quality of beef and if it was produced according to good welfare standards 65% or respondents would pay a higher price for it. (COOK & BOWLES, 2012)

The SWOT analysis have been produced by expert to evaluate the strengths, weaknesses, opportunities and threats as shown in table 3 below.

Table 3 – The SWOT analysis for Argentina's animal welfare legislation

Main strengths	Main weaknesses
Animal Welfare is a Government responsibility trough "Coordination de Bienestar Animal (Animal Welfare Coordination).	The most important main weakness is control in the application of law.
There is a manual in Argentina called: "Procedimiento en Bienestar Animal (Animal Welfare Methods)"	There is not enough binding legislation into first level. Legislation is based on voluntary codes. Actually many farmers know the relationship between animal welfare, productivity and products quality, but not as a general fact. Farmers have not
According with livestock features (outdoor systems on the most of livestock species) is easier establish regulations.	
Confinement livestock systems are looking for animal welfare opportunities.	
Many of the most important livestock companies are working about: "Good G11practices" from farm to plate and chain certificated by regulation ISO 9001:2000.	
Main opportunities	Main threats
Cattle and pig production in our country have outdoor and pasture conditions in all productive cycles with or without feed supplements. This fact is an advantage as for other countries.	Threats are associated with import countries demands
Cattle and pig's life conditions are according with good animal welfare standards, they are near to wild conditions.	
Moreover, intensive pig and poultry livestock systems are assimilating animal welfare concept.	

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;

data source: (SCHMID & KILCHSPERGER, 2010)

3.4. Methods overview

Over 30 years scientist, economists, researchers and others professionals collected information to describe the impact of living conditions on animals and understand their needs. (BOTREAU et al., 2007) However the direction of animal welfare research is different depending on ethical concern of each scientists which propose different conceptions and definitions of animal welfare. Therefore there are different research methods and different ways of interpreting results. (FRASER et al., 1997)

Consequently are these studies serving as recommendations to policies makers – e.g. comparing systems to refine legislation, advising farmers how to improve animal welfare, or implementing welfare certification schemes. To provide overall evaluation of animal welfare is complicated and none of single measures can do it. The animal welfare has to be recognized as multidimensional problem which require combining of known measures. (BOTREAU et al., 2007)

Generally speaking there are two ways how to look at the animal welfare research. Firstly the one which is solving problems of how certain conditions affect the animals in both states, the emotional and the physical. Simply said how to measure animal welfare. Knowledge and evidence of biological functioning, emotions and feelings are influence by different factors are collected and interpreted. Nowadays the important goal is to find valid and reliable indicators of animal welfare. (KNIERIM, 2007)

In relation to equine welfare there is an attempt of holistic approach for evaluation. Sofie Viksten have worked to develop 'Equine Welfare Assessment Protocol', which would put a common criteria in this topic. More details are mentioned in chapter 3.1.2. Equine Welfare. (VIKSTEN, 2013) More detailed information were gained in the Bachelor thesis, Economic analysis of chosen elements of equine welfare (BAREŠOVÁ, 2012).

Secondly how is the animal welfare or its improvement valued at the market that is linked to market forces, in the sense of consumers' willingness to pay extra for animal welfare. To be able to derive the value of animal welfare the stated preferences techniques, such a contingent valuation method or choice experiments, have been suggested. Both are use in the case of non-trade goods to estimate people' willingness to pay. The contingent valuation method have chosen as more adequate one. (NIELSEN, AMER, & OLESEN, 2008)

3.4.1. The Contingent Valuation method

The Contingent Valuation method (CVM) was theoretically used for the first time in 1947 by Ciriacy-Wantrup who averred that the prevention of soil erosion have some extra market benefits. According to his opinion these benefits can be estimate by individuals' willingness to pay determined through a survey method. However empirically was this method use much later in 1963 when Davis used it to evaluate the benefits of goose hunting. During 1960s was CVM recognised as important part of the total economic value, especially two major non-use values, option and existence value. In 1993 Smith mentioned that CVM is the only method which is capable of capturing these values. (VENKATACHALAM, 2003)

Nowadays is CV method used in situation when consumers are willing to pay for given product, but due to missing labelling in the current market the product cannot be differentiated from the others. "*In order to quantify the value of improved welfare based on consumer's willingness to pay, products need to be labelled indicating that these differ in level of e.g. animal welfare. By this, parts of animal welfare or environmental improvements become private goods with values and prices reflecting market demand and supply.*" (NIELSEN, AMER, & OLESEN, 2008) By using the surveys to obtain peoples' preferences for public goods asking what they are willing to pay in money amounts for specified improvements. Typically is this method used in public policy decision making about animal welfare or the environment in the case of absence of observable markets. (EDEL & DEMPFLE, 2004) The most commonly used CV questions are yes/no choices, when respondent choose between two alternatives, one is status quo and other alternative with higher cost than status quo, but offering something more, e. g. animal welfare. (CARSON, 2000)

CV method has been used by Edel and Demplfle (2004) in research to evaluate the Breeding Objective for the South German Heavy Horse, more precisely to derive weighing factors for all relevant conformation and performance traits. In this article the Contingent Valuation method using the survey, proved to be successful in revealing general insights into the motivation and the preferences of the breeders. In the survey were in total 15 traits tested, which are part of regular performance tests. These includes for example conformation, quality of walk and trot, hoofing, correctness of legs. These traits are scored in usual

performance test by breeders from 1 "very bad" to 10 "excellent". As performance tests are well known to breeders the authors were not tempted to discuss the advantages or disadvantages of scoring system. In their survey knowledge of these test was used and decomposition strategy was followed. The respondent firstly valued a stud with a quality corresponding to grade 6. After he was asked maximum price for a stud with the same age, colour and height but with a quality grade 7. Later the respondent was asked to allocate the difference in value between grade 6 and 7 to the particular traits. This system helped the respondent the valuation of each trait with a visual control about his decision. In addition information about the socio-economic characteristics of the respondent were collected. And as authors said: "*We have no reason to doubt the validity of the results.*" (EDEL & DEMPFLE, 2004)

Lee and Han (2002) used the CV-method to estimate the use and preservation values of national parks' tourism resource. As payment option an admission fee was chosen for the measurement of use value, because Koreans are used to pay admission fee for recreation sites. Carefully designed questioner have been used to collect data necessary for calculation of the value of WTP. In this research the truncated mean WTP was calculated by numerical integration, ranging from 0 to Maximum Bid. The results showed that people are willing to pay much higher price than was the admission fee to the national parks in South Korea. Before this recommendation the government had to subsidies the maintenance of the quality of the environment with the risk of harming this natural and cultural resource due to insufficient investment. The findings supported the National Parks management policy to differentiating admission fees to obtain enough finance for protection.

Nielsen, Amer and Olesen (2008) described and addressed the challenges of including welfare and environmental concerns in the breeding goal and discussed limitations and advantages of existing methods. Even though the authors were satisfied with the tool sets provided by existing methods, profit equations or bio-economic models combined with methods based on people´s willingness to pay, they were missing the help to make a decision who should pay the cost of the improvement, whether society or breeders.

The paper from Chilton, Burgess and Hitchinson (2006) tries the viability of an alternative method (to willingness to pay method) of bringing out values for farm animal welfare improvements. Even if the matching method appeared to perform well the results do not concur with the results of willingness to pay method of the same population sample.

However as any other method neither CV is not without limitation and controversies. Machmillan, Hanley & Lienhoop (2006) investigate in their research if, how and why is WTP affected by time to think, differing information levels, and opportunity to deliberate. They have determined that in case of familiar good these factor make no significant difference. On the other hand in case of unfimiliar good (Red Kite Project, reitroduction to Scottish nature), after several rounds of valuation the final results are significantly different. The conclusion of this research was that CV surveys may be appropriate for environmental familiar good, e. g. recreation benefits, but unppropriate in case of unfamiliar good as for example rare spicies.

Other paper called 'The contingent valuation method: A review' from L. Venkatachalam (2003) speaks about the theoretical, methodical and empirical aspects of CV method. The author mentioned that the major criticism is the validity (accurancy) and realibity (consistency) of CV method results. To avoid this posibility some guidelines were formulated from different sources, the main points which were included in all suggested guidelines are:

- CVM should be apply only to familiar goods to respondent
- Scenario should be clean with no level of unceertainty
- The payment vehicle should be appropiate and realistic
- WTA (willingnes to accept) should not be used[3]
- Correct population should be sample
- Well chosen way of survey, rather personal
- All CV studies should be designed that they can be carried in a later stage again to assess the validity and the reliability of the results
  (VENKATACHALAM, 2003)

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[3] Even though in majority of case the WTP is recommended, in researches in developing countries focusing on negative impact of the developmental and environmental projects on the poorer section of the society, the WTA compensation is more appropriate measure. (VENKATACHALAM, 2003)

Potential biases could be minimised if the guidelines provided by several authors are followed carefully. Anyway these guidelines are not a framework for conducting an ideal CV survey. In the conclusion of Venkatachalam (2003) paper was sumed up *"that even though CV had certain limitations, this method is a promising method and it could be used to derive useful information."*

3.4.2. Regression model

The relationship between two variables may be modelled by simple linear regression model which fit a linear equation to observed data. In this case one variable (X) is considered as an explanatory or independent variable, and second one (Y) is considered as a dependent variable. In most problems there is present more than one explanatory variable. This leads to need of multiple linear regression model.

$$Y_i = \alpha + \beta_1 X_{i,1} + \cdots + \beta_p X_{i,p} + \varepsilon_i.$$

In this model Y_i is dependent variable for i-th observation, α is called the intercept and the β_j are called slopes or coefficients. The main assumptions for the errors ε_i is that $\varepsilon_i = 0$ and $var(\varepsilon_i) = \sigma_2$ (all variances are equal). Also the ε_i should be independent of each other. (GARY, 2003)

3.4.3. The certification

On the free market are offered different quality of products and services. Unfortunately it is hard for consumers to observe the differences due to asymmetric information on the market, which play important role in allocation and distribution of resource. (STRAUSZ, 2004) This usually leads to low-quality products or services trade although consumers value high quality. To prevent such an adverse effect several mechanisms exist. Among others belongs: investment in producer's reputation, advertising, issue warranties, certification, and self-regulation. (MYSLIVEČEK, 2008)

Additionally asymmetric information at the market might lead to a public need of reduction of this asymmetries. An increased demand for certifying intermediaries as

laboratories, auditors, ISO registrars, Internet search engines or schools, who inspect a producer's private information and publish their findings to public. (STRAUSZ, 2004)

At least theoretically certification and self-regulation are more demanded and work better because they are based on the certifiers in contrast to producer's reputation, advertising or warranties. The certifying intermediaries are setting up "quality standard" which producer has to meet if applying for its certificate. (MYSLIVEČEK, 2008)

Frequently regulatory bodies require mandatory quality standard format of certain product or service. Sometimes producers have to provide specific information (e.g. automobile industry), or products or services are inspect on site by government officials (e.g. restaurant hygiene inspections). By majority mandatory standards are focused on industries or product's/service's attributes connected with health and safety issues. In this case the other attributes possibly influencing demand are ignored. (DRANOVE & JIN, 2010)

There are known cases where certifiers were accepting bribes, this behaviour is called *capture*. Although the certification in commercial market works relatively well the problem of capture is a concern to consumers. In both paper Strausz (2004) and Dranove & Jin (2010) is mentioned an example of the Andersen – Enron scandal, where Andersen the accountant for Enron, falsely certified the accounts of Enron as accurate. This event raised questions about the potential conflict of interest in certifiers and the U.S. Security and Exchange Commision disallowed accounting businesses to provide audit and consulting services to one client. Different ways how to look at the problem of capture are explained below.

Strausz (2004) pointed out that most of the certifiers are resisting the pressure of capture, because of the risk of losing its reputation - public trust and with it connected future profit. Therefore in his paper mentioned four consideration for implementation of honesty certification for industrial organization on certified market.

1) *"Honest certification requires high prices that may even exceed the static monopoly price.*
2) *Honest certification exhibits economies of scale.*
3) *Price competition tends to a monopolization of certification markets.*
4) *The threat of capture is responsible for a demand for external certification."*

Speaking about each point, starting with the first one, Strausz (2004) pointed out the even the static monopoly price is insufficient to preserve a reputation for honesty. The reputation demand higher prices than are marginal costs and the treat of capture is minimized at higher price too. Secondly when the certifier expect higher number of future certification jobs the capture is less attractive and honesty is easier to sustain. From this reasoning come the second point that certification exhibits increasing economies of scale. The author stated that in a monopoly the certifier is able to guarantee honest certification at a lower price. From which can be obvious the third point that competition price tends to a monopolization of the certification market. This principle emphasize that existence of one external, specialized certifier is effective and sustainable solution.

Dranove & Jin (2010) discussed this problem from different point of view. With a question mark they try to find out if competition, reputation or external monitoring mitigate the problem of certifiers' capture. The competition may have both impact, positive and negative. The positive works if the competition is among certifiers in price and rating criteria, if there have been already some noisy information about product quality, and if certifier commits to a rating criterion before seller/producer pick it. The competition worsen the problem if the application for certificate is non-transparent so the certifiers encourages sellers shopping certificates in multiple amount. Similarly it can be viewed on the problem of reputation or external monitoring. For the purpose of this paper the first idea of Strausz (2004) "*Effectively, honest certification is easier to sustain when certification is concentrated at one party.*" will be aplied.

3.4.4. Welfare certification in the Czech Republic

Due to absence of certification for equine riding industries known in the Czech Republic, the certificates for farm animal welfare will be considered as framework for this part. The well-known certification of food product quality connected with animal welfare in the US is organic and in the EU is BIO. Other certification for farmers is ISO 22000, where the norms in food safety, general norms, management or use of resources are controlled. Other certifier for animal welfare common in the US and in the EU is GLOBALG.A.P., where animal welfare is seen as one of the main component of sustainable agricultural

practices which are essential for development of responsible and successful business. (BAREŠOVÁ, 2014)

Because in present times there is no assessment protocol which would give a common standards in the whole EU accepted, citizens which care about the animal welfare have few choices. Whether they believe to every producer who say on the package that animals are treated in welfare condition or they trust in certifiers bodies. In the Czech Republic the easiest way for consumers is to buy products with certificate BIO. The eco-farmers has to fulfil strict conditions regarding animal welfare from their birth to slaughter house. It cannot be say that there is a hundred percent warranty that animals lived "happy" life, but in overall BIO is the most reliable animal welfare certificate in Czech Republic nowadays. (BODOKOVÁ, 2007).

The ecological farmers and food producers are supervise by state-authorized organizations. Anyone who want to produce products with BIO label has to sign a contract with one of these organizations. The producer has to meet all requirements, respect specified rules and regulation, and agree with regular and irregular inspections. The certificate is awarded for one year and may be removed at any time in violation of the rules. There are three levels of control above the eco-farming in Czech Republic; legal, supervision, and official control. On the legal level there are four organization that are allowed to issue certificate BIO.

- ABCert AG - presented by code: CZ-BIO-002
- BIOKONT CZ – presented by code: CZ-BIO-003
- KEZ, o.p.s.- presented by code: CZ-BIO-001
- Bureau Veritas Czech Republic spol. s.r.o. – presented by code: CZ-BIO-004

The supervisor is an employee of the Ministry of Agriculture, who oversees randomly the individual control in the field, evaluates work of these legal organisations, and controls if everything is in compliance with relevant laws and regulations. The supervision can be seen as control of the control. Above the above-mentioned bodies oversee the state independent control authority - Central Inspection and Testing Institute of Agriculture (ÚKZÚZ). Annually they check a sample of about 5% of BIO farms in the Czech Republic. (MeBIO, 2014)

Logo , so called "biozebra" (shown on the figure 1 next), can be used only in accordance with the provisions of Law no. 242/2000 Coll., On organic farming, as amended, and Decree no. 16/2006 Coll., Dated January 6, 2006, to implement certain provisions of the Act on eco farming. (eAGRI, 2010)

The European logo for ecological farming is shown on figure 2 below. Its use is from 1 July 2010 mandatory. In addition to the mandatory use of the EU eco - logo on pre-packaged bio - food production is valid from July 1, 2010 is also the obligation to indicate on the packaging the place where agricultural raw materials of which the product is composed, were produced. (eAGRI, 2010)

Figure 1 – BIO logo, "biozebra"

Source: eAgri, 2010

Figure 2 – The European logo for ecological farming

Source: eAgri, 2010

3.4.5. Consumer surplus

The consumer surplus is the difference between price that is consumer willing to pay and the real price. The total consumer surplus in the economy is calculated as sum up of individual consumers. Graphical representation of consumer surplus is shown on the figure 3 below, where is drawn a typical linear demand curve with price P on the axis y and quantity Q on the axis x. The equilibrium is at the intercept of price P* (the price consumer will pay) and quantity of goods (that will be purchased). Pmwp interpret the maximum willingness to pay price and the green triangle represent the consumer surplus. To calculate the area of the green triangle which is equal to ½(base*height) it is necessary to know the base, which is equal to Q* and the height, which is equal to Pmwp minus P*. (FREEECONHELP, 2011)

Figure 3 – Consumer Surplus
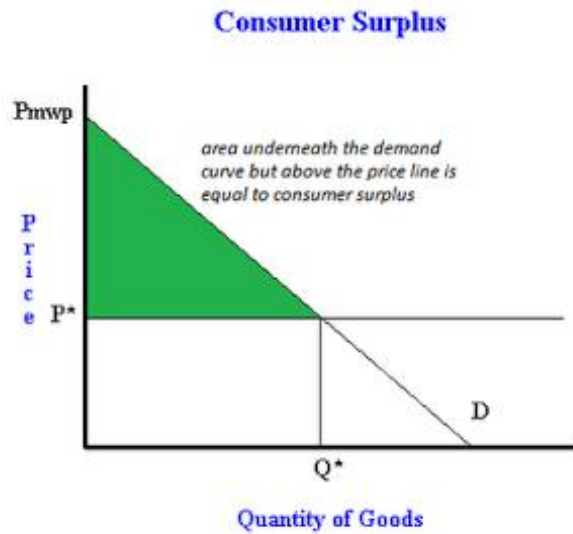
Source: (FREEECONHELP, 2011)

4. The practical part

The analysis of horse industries and animal welfare legislation in selected countries and the EU with highest number of horse population have been done by using synthesis, induction and deduction. As a result an overview of the selected countries have been generated to find out the suitable location for equine welfare certification of riding school. Further research was located in the selected area the EU.

To know if customers are willing to pay for improvement of equine welfare the Contingent Valuation survey have been louged and results were interpreted. The gain data have provided already interesting information and furhter served for the calculations. Regression method was applied to define the relations between each variable and obtain as relavant value of WTP as possible have been made.

An abstract example of certification cost calculation was produced to determine the possible consumer surplus. An average eco-farm in the Czech Republic serve as an example and price were obtain from the real price list of BIOKONT. Total possible consumer surplus in the Czech Republic and few other European contries was presented.

4.1. Choice of location

By analysing the importance of horse industry, animal welfare legislation and citizens attitudes to animal welfare in the countries (and EU) with the biggest population of horses in the world was determined that Argentina, Brazil, China neither Mexico are not ready for applying "Equine welfare certification". Neither Canada which was included in the research as developed country with strong horse breeding tradition, was not found as suitable one, because of its poof animal welfare legislation and general attitude to an animal as to property. The overall of evaluated factors is seen in table 4 below.

Table 4 – Overall of evaluated factors for selected countries

Factors	Selected countries						
	Argentina	Brazil	Canada	China	EU	Mexico	US
Data availability in english or czech	Tolerable	Tolerable	Sufficient	Tolerable	Sufficient	Poor	Sufficient
Number of horses in million in 2013*	3.6	5.4	0.4	6.3	3.6	6.3	10.3
Overall impact on economy in $	no data	3.5	19.7	no data	128	no data	102
Taxes payed in $	no data	no data	no data	no data	6.2	no data	1.9
Animal welfare legislation existence	yes	yes	yes	yes	yes	yes	yes
Year of first law	1954	1934	not found	1988	1968	1940	1966
Special law for eqine welfare	yes	no	no	not found	yes	not found	yes
Possitive consumers' attitudes to animal welfare	Meddium	Meddium	Low	Low	Very high	Low	Very high

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;

data with *: database FAOSTAT, 2014

As the most suitable from South America, Argentina would be considered as possible candidate in future, thanks to its well-established cooperation with FEI, strong breeding industry, long history in animal welfare legislation, acceptance and cooperation with European certification programs. The consumers' attitude to animal welfare has already started to have positive impact on food industry, but in this case the consumers' attitude in importing countries. In this case mainly economic factors would be considers as a break in introducing the equine welfare certification.

As the most suitable where to introduce equine welfare certification the author has chosen the EU. Even though the US has similar values of influencing factors there are few important differences. In the EU the overall impact of horse industry is higher than in US even if the horse population is much smaller. This fact shows that people are willing to spend

higher amount of money on one horse than they are in US. To confirm this assumption the CV survey has been within the EU, the Czech Republic.

4.2. The survey

The online survey was created on free webpage www.survio.com, lounged by using specialized Facebook's groups and only people connected to horse riding industry were asked to response. Unfortunately the personal form was not possible because of three main reasons: the population sample connected to horse industry is from whole Czech Republic therefore the time and cost to travel is inadequate and the limited number of interviewers. However the specified group of respondent were chosen and further in the survey, if the person have fell as irrelevant to answer, he or she could follow the recommendation to do it. The questioner have been written in dual, Czech and English, version. The survey have consisted of 15 question: one is an opening question whether the respondent consider him/herself as horse-lover from which are 5 linked to socio-economic information (serving for statistical purposes), and the rest are questions connected to the topic. From the total are 4 questions yes/no choice, one is question asking to line up preferences, two are questions with given choices of answers and rest offers open answers.

The choice of realistic payment vehicle option in a CV survey is very important because it represents the WTP scenario. (LEE & HAN, 2002) The payment may have included price for riding lesson, price for trail ride, club membership price, or special fund. The riding lesson price have been chosen as the most logical option for customers of riding schools. Because this survey was mainly in the Czech Republic the prices were asked in CZK. Respondent were not limited by given borders for price level.

The CV was carefully designed to make respondents fully aware of the hypothetical market situation which is necessary to establish for estimation of a reasonable value of non-market goods. Respondents were also informed that their provided data are anonymous and serve for academic research. This information were provided to reduce the rate of rejection because of data protection issue.

4.2.1. The survey results

200 people were asked to fill this survey from which 174 visited it online. From this amount 57% persons just viewed it and probably considered themselves as irrelevant, 5% have not finished it and 38% responded to all questions. The final number of respondent is 66. Discussion whether the target group was well chosen or it person interviews would give better rate is opened.

On the first question if respondent consider himself/herself as a horse lover answer positively 54 respondent which mean 81.81%. On the second question whether is respondent a horse owner or not answer yes 43 persons (65.15%).

The question number 3 was: Have you ever use services of horse-riding schools? (By yourself or for your children). There were four given answers: often, few times, once, never. Respondent could chose just one possible answer and the result were that 47% respondent used services of horse riding schools few times, 23% often, 17% never and 13% just once. These results are shown in graph 11 bellow.

Graph 11 – Result of the question 3
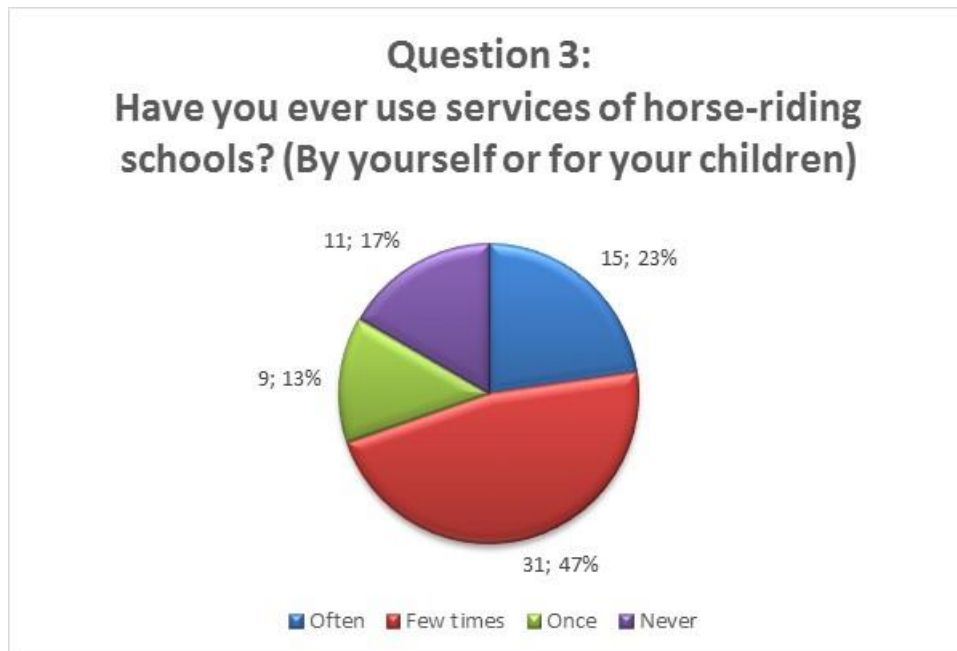
The fourth question was asking how the person have chosen the place where to go riding. Similarly as in third question there were four given choices on recommendation, internet, randomly or other. The majority 44% of surveyors make their choice on recommendation, 9% found the stable on internet, 18% randomly and 29% have chosen other answer. The result are demonstrated on the graph 12 below. If respondent choose the answer other he/she had a choice to specify his/her answer. Three respondents mentioned that they have chosen the riding school, because it was owned by a family member, four respondents decided after their personal visit of few places, four went to visit the closest stable to their home, two were taken there by their friends, one by her parents, and five people have not specified their answer.

Graph 12 – Result of the question 4
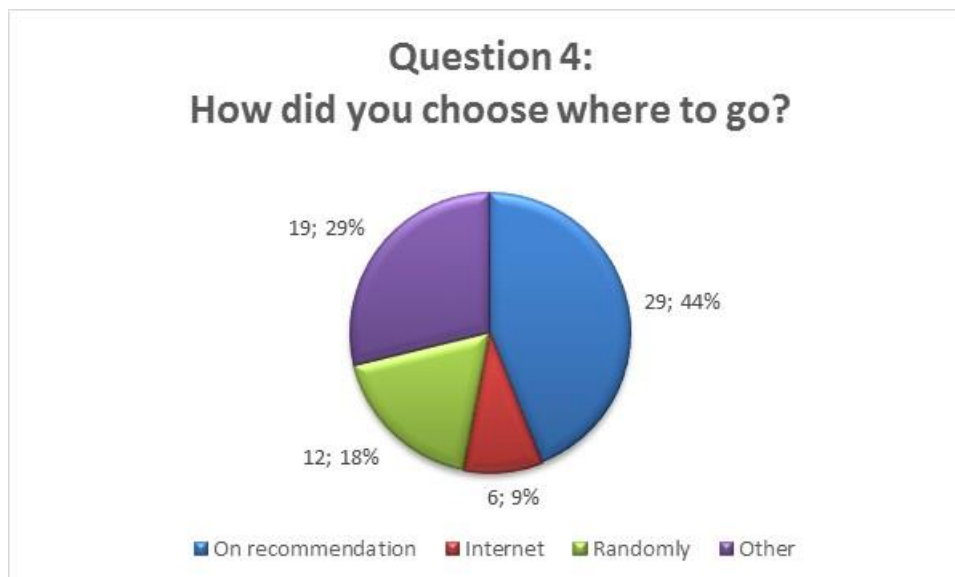
Source: Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;
data source: CV survey

The fifth question was aimed to find out what is important for respondents while they are choosing place where to go to ride. Six crucial conditions were given in a random order: condition in which are horses kept, location, price, friendly staff, training of the horses, and riding facilities. The respondents had to order them according their preferences from the most important to the least important one. The condition in which are horses kept was the most important one (the highest score) in the overall, which is demonstrated on the graph 13 below.

Graph 13 – Result of the question 5

Question 5:
What importnat for you while chosing place where to go to ride?

Crucial conditions	Value
riding facilities	1,00
training of the horses	1,36
price	1,65
friendly staff	2,29
location	2,50
condition in which are horses kept	2,85

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;
data source: CV survey

The sixth question: What price (in CZK) is the maximum you would pay for one hour riding lesson? The response was without any limitation to don't influence respondent in their experience or willingness to pay. The highest amount was 1000 CZK and the lowest 200 CZK, the average price people are willing to pay for one hour riding lesson was calculated 396.7 CZK. The average deviation was 124.5 CZK. The most numerous value was 500 CZK that 21 respondent answered.

The question number seven was asking what price (in CZK) is the maximum the respondents would pay for one hour of trail ride. This result was very similar to riding lesson price, but little bit lower. The average price was 377.4CZK, maximum amount 1000 CZK, minimum 100 CZK, and the average deviation 129.7 CZK.

The eight question: Would you be willing to pay more than the usual amount for one hour riding lesson if the place is RECOMMENDED as "welfare friendly"? , had yes or no answers. Exactly two thirst of respondent (44) would be willing to pay more.

Question number nine was asking if people would be willing to pay more for one hour of riding lesson if a "welfare friendly" place would be CERTIFICATED. Surprisingly less respondent would be willing to pay more just 42 that is 63.6%.

How much more of a percentage from the price for one riding lesson would respondent be willing to pay if the place is RECOMMENDED to them as "welfare friendly" was question number ten. The respondents could write what they wished because the answer was not limited. The highest number was 500%, so one of the respondent would be willing to pay five times more for recommended welfare friendly place. The smallest number was 7%. The most numerous was 20% that 11 respondents would pay more. In average would people be willing to pay 24.1% more. The average deviation was 23.8% which shows that

The eleventh question was asking the same as question number ten, just with the difference that the place is CERTIFICATED as "welfare friendly". Because less people were willing to pay more for certificated place that recommended, even here we see that the percentage is lower compare to answers on question ten. The highest number was 500% same as in previous case but the smallest was 1%. The average value was 21.4% that is 2.7% less than for place with recommendation. The average deviation was lower in this case too on the level of 17.2% which shows the willingness of respondents as more similar values. 16 respondent were answering that they are willing to pay 20% which was the most numerous value.

The last four question were finding out the social-economical background of respondents as first and second question. The twelfth question was asking about the gender of respondent and the results shows that 75.8% or 50 respondents were women.

The question number thirteen was asking the age of respondents. Possible answers were categorized into six group. First less than 18, second from 18 to 25, third from 26 to 35, fourth from 36 to 45, fifth from 46 to 55 and last one more than 55 years old. The most numerous group was from 18 to 25 with 24 respondents. The results are shown on the graph 14 below.
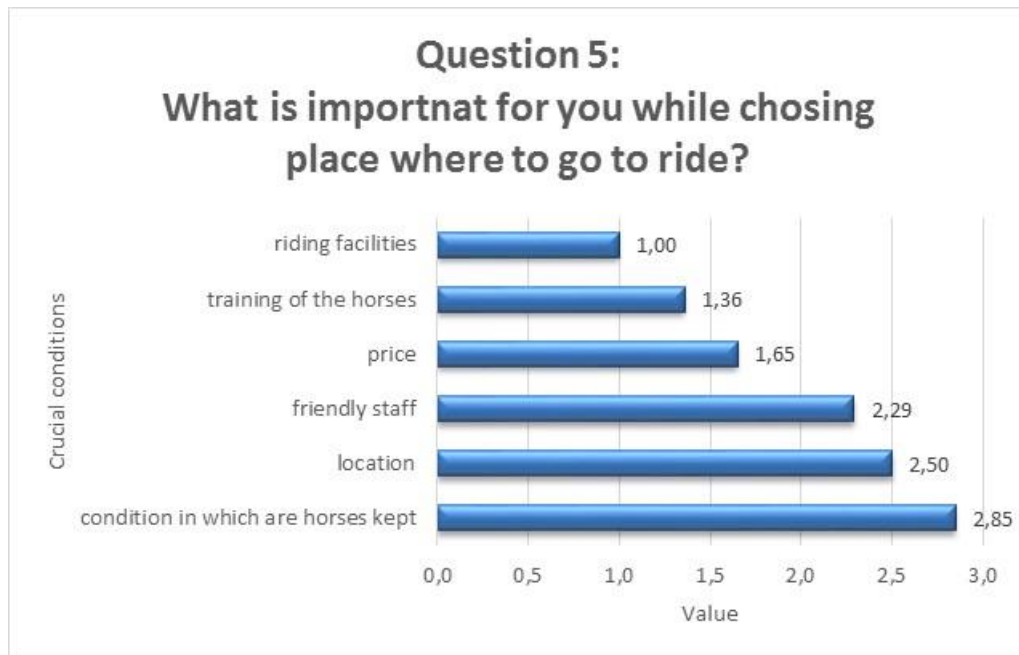
Graph 14 – Results of the question 13
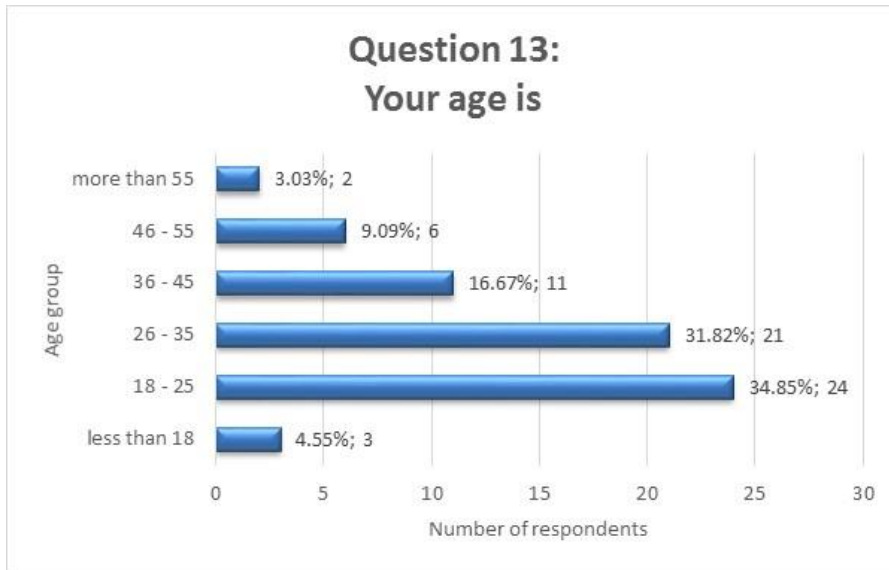
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;
data source: CV survey

The question number fourteen was finding out the highest reached education and result are shown in the graph 15 below. Four options were given to respondents taking into account the Czech system of education. The respondents had to choose between Primary school, High school, University with Bachelor or University with other professional degree. Corresponding to age composition the most numerous education was High school.

Graph 15 – Result of the question 14
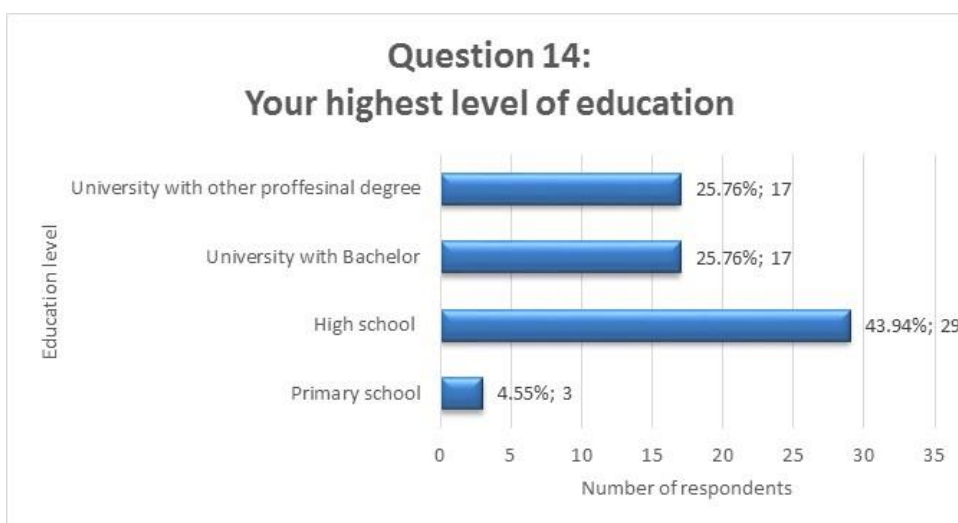
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;
data source: CV survey

The last question was: Your average monthly income is. The answers were divided into five options: less than 15 000 CZK, 15 000 – 25 000 CZK, 26 000 – 35 000, 36 000 – 45 000 and more than 45 000. The most numerous group was the lowest option caused probably by the young majority of respondents. Results in values and percentages are shown in graph 16 below.

Graph 16 – Result of the question 15
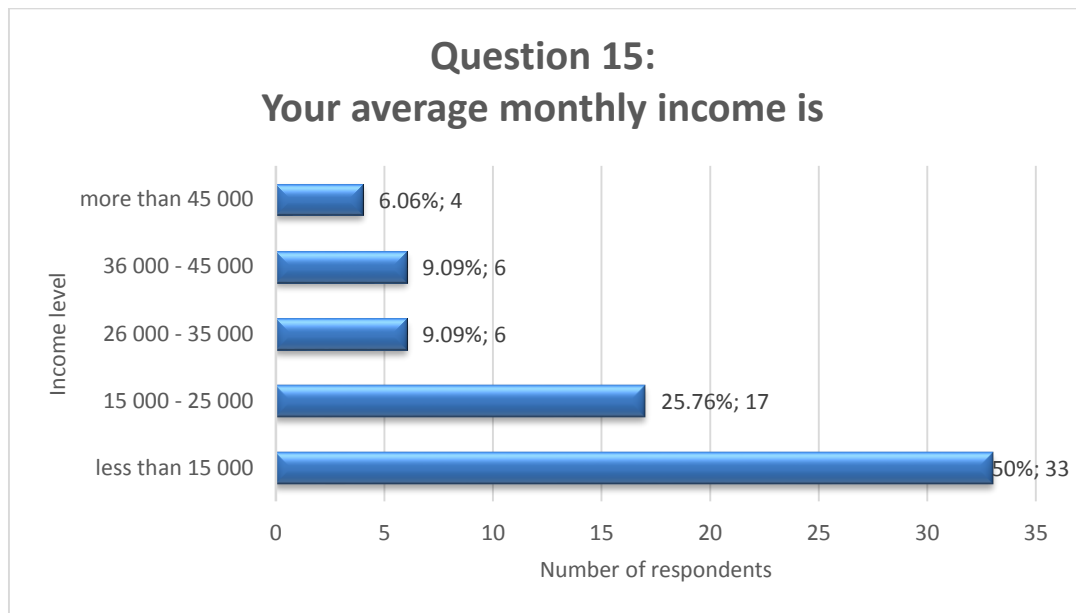
Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014;
data source: CV survey

4.3. The regression analysis

The regression analysis from data obtained by CV survey have been done. On the beginning two most extreme respondents, minimum and maximum values, were remove due to possible misrepresentation, so totally 63 respondents were analysed. Further the data had to be change in a form suitable for multiple regression model.

4.3.1. Variables

As a dependent variable have been calculated chosen two variables, WTP-R if the place is recommended to the respondent and WTP-C if the place is certified. The value of WTP-R was calculated as value given by the respondent as an answer on the sixth question (What price (in CZK) is the maximum you would pay for one hour riding lesson.) times the value given as an answer on the tenth question (How much more of a percentage from the price for one riding lesson would respondent be willing to pay if the place is RECOMMENDED to them as "welfare friendly"?). So the final value of WTP-R says how much more (in CZK) would be respondent willing to pay over the maximum price he/she would pay for one hour of riding lesson. The value of WTP-C is calculated similarly, just sixth question is multiplied by question number eleven (How much more of a percentage from the price for one riding lesson would respondent be willing to pay if the place is CERTIFICATED as "welfare friendly?), so the final value of WTP-C says how much more (in CZK) is respondent willing to pay over the maximum price he/she would pay for one hour of riding lesson.

Independent or explanatory variables were chosen the socio-economic information about respondent and three more information gained from the question number three (Have you ever use services of horse-riding schools?), eight (Would you be willing to pay more than the usual amount for one hour riding lesson if the place is RECOMMENDED as "welfare friendly"?) and nine (Would you be willing to pay more than the usual amount for one hour riding lesson if the place is CERTIFIED as "welfare friendly"?). From this choice nine independent variables have been specified and its given value for the purpose of regression model is written in the brackets. :

- variable L, if the respondent does (1) or doesn't (0) consider him/herself as horse lover
- variable O, if the respondent is (1) or isn't (0) a horse owner
- variable U, if the respondent use services of horse-riding school often (3), few times (2), once (1) or never (0)
- variable R, if the respondent is (1) or isn't (0) willing to pay more if the place is recommended as "welfare friendly"

- variable C, if the respondent is (1) or isn't (0) willing to pay more if the place is certified as "welfare friendly"
- variable G, if the respondent is male (1) or female (0)
- variable A, if the respondent belong to age group less than 18 (15), 18-25 (22.5), 26-35 (32.5), 36-45 (42.5), 46-55 (52.5), 55 and more (60)
- variable E, if the respondent's highest finished education was primary school (1), high school (2), university with Bachelor (3), university with professional degree (4)
- variable I, if the respondent's average monthly income was less than 15 000CZK (10000), 15 000-25 000CZK (20000), 26 000 – 35 000CZK (30000), 36 000 – 45 000CZK (40000), 45 000 – 55 000CZK (50000), more than 55 000CZK (60000)

Two models have been created to find out the relations between mentioned independent variable and dependent variables.

$$WTP\text{-}R = f\,(L, O, U, R, C, G, A, E, I) + \varepsilon i$$
$$WTP\text{-}C = f\,(L, O, U, R, C, G, A, E, I) + \varepsilon i$$

4.3.2. Result of the regression analysis

The table 5 shows result of linear regression model with dependent variable WTP-R. The exhibited R-square value of 0.5 and Adjusted R-squared value of 0.25 which tells that only 25% of the linear variation in the dependent variable is explained by the model. This can be seen as well from the P value where only one variable is statistically significant at 5% level, the variable C, that tell us the willingness to pay if the place is certified as "welfare friendly" but in the relation with dependent variable WTP-R . Logically this model doesn´t make any sense.

Table 5 – Linear regression model results (Dependent variable = WTP – R)

Linear regression model results (Dependent variable = WTP-R)				
N	R-square	Adj R-sq	F value	F Significance
63	0.504641288	0.25466283	2.012084152	0.055988562
Variables	Coeficients	Standard Error	t Statictic	P value
Intercept	79.658562864	124.63163482	0.63915203374	0.52547691089
Variable L	-61.773505424	96.517781053	-0.64002202236	0.52491554257
Variable O	27454738027	70.529779465	0.38926448140	0.69864019658
Variable U	-34.63251299	28.16317275	-1.2297092126	0.2242370241
Variable R	-56.428776525	70.00024560	-0.80612255055	0.42377453826
Variable C	**203.58342798**	**70.70608826**	**2.8792913452**	**0.005737190363**
Variable G	-41.138150911	65.879097744	-0.62444921561	0.53501159396
Variable A	0.86417451614	2.9054990732	0.29742722139	0.76730306724
Variable E	-9.6566301053	27.078816023	-0.35661197	0.72279816376
Variable I	0.00226272166	0.00246385740	0.9183655	0.362588166

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014

The table 6 represent result of regression analysis where independent variables stayed the same and dependent variable become the WTP-C. Higher value for adjusted R-square say that 30% of linear variation of dependent variable is explained by this model. Statistically significant at smaller than 5% level is only one variable, the variable C with the value of 0.00024. The coefficient given by this variable says that respondent who are willing to pay more for certified riding lesson hour they would pay 154.6 CZK above the usual price. The other variables are not strongly related to dependent variable.

Table 6 – Linear regression model results (Dependent variable = WTP-C)

Linear regression model results (Dependent variable = WTP-C)				
N	R-square	Adj R-sq	F value	F Significance
63	0.552562138	0.305324916	2.588295659	0.014938969
Variables	Coeficients	Standard Error	t Statictic	P value
Intercept	71.221873077	69.216874453	1.0289669049	0.30816835164
Variable L	-76.761889453	53.60323759	-1.4320383038	0.15800434866
Variable O	12.418786273	39.17023874	0.31704647899	0.75245389845
Variable U	7.5716081528	15.641027219	0.48408637403	0.63031893482
Variable R	-54.627770405	38.876150654	-1.4051743674	0.16580404765
Variable C	**154.66841054**	**39.268155643**	**3.938774511**	**0.00024080034**
Variable G	-20.145839192	36.587382041	-0.550622593	0.58420596341
Variable A	-0.72761624103	1.6136317626	-0.45091839282	0.65388785616
Variable E	-2.0018345437	15.038806252	-0.133111266	0.89460950914
Variable I	0.00132966571	0.0013683565	0.97172462310	0.33560162111

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014

Therefore the model was modified and three the least significant variables were removed, variable O, variable A, and variable E. The modified model was applied just on the dependent variable WTP-C. The table 7 shows that values of R-square, adjusted R-square have hardly changed. The biggest change can be seen in Variable L, but it had not become significant. This result demonstrate that variable L could be significant but not in this case. The significance of variable C have not been change by modified model and even the value stay very close to the first result, the decrease is very low.

Table 7 – Modified linear regression model results (Dependent variable = WTP-C)

Modified linear regression model results (Dependent variable = WTP-C)				
N	R-square	Adj R-sq	F value	F Significance
63	0.547810774	0.300096644	4.001841088	0.002106227
Variables	Coefficients	Standard Error	t Statictic	P value
Intercept	49,37487547	48,1889926	1,024608999	0,309953481
Variable L	**-71,90943048**	**39,45975947**	**-1,822348424**	**0,073743116**
Variable U	8,708622067	14,76622483	0,589766319	0,557719516
Variable R	-52,88981447	37,82835905	-1,398152492	0,167580501
Variable C	**153,5044213**	**37,78986705**	**4,06205243**	**0,000152945**
Variable G	-21,15810993	35,58561577	-0,594569167	0,55452624
Variable I	0,001072139	0,001129948	0,948839509	0,346779144

Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014

As a result of regression analysis can be concluded that chosen variables, except variable C, did not have significant impact on dependent variable. Variable C had explained that if people are willing to pay for welfare certified services or riding schools they are willing to pay 154 CZK more. The non-significance of other variables testify that the willingness to pay more for welfare certified riding lesson hour is not dependent on respondent age, gender, level of education nor income.

4.4. Cost of certification

An abstract example to calculate the cost of certification for an average sized farm is shown to demonstrate possible consumer surplus. An average conventional farms size in the Czech Republic is around 80ha, which significantly exceeds the EU – 27 average of 40ha. In eco-farming the average area is larger about 125ha. In this averages are included farm with crop production, animal production or both. The trend of doing both conventional and eco farming is significant. The most common size of eco-farm was from 10 to 50 ha (39.5% in 2012) and trend of establishing horse eco-farms is increasing by around 20% annually. In 2010 there was 369 horse eco-farms with total number of horses 3662, so in average there are about 10 horses at one eco-farm. For this example is taken an eco-farm with 10 horses and a size of 30 ha.

Taking as an example of BIO certification, because it is price level seems to work well in the conditions of Czech Republic. The used BIOKONT pricelist is for a year 2015.

Cost of BIO certification for average horse eco-farm

Basic fee for the first or ordinary control…………………………………..2400 CZK

The annual rate for the inspection and certification (25CZK/ha)……………750 CZK

The annual rate for the license agreement for the provision of rights to use the

label "Biokont" for the Czech Republic and the whole EU………………...1000 CZK

Total for BIO certification for the first year ……………………………..4150 CZK

If this abstract horse eco-farm would be providing riding lesson in volume of 1000 hours a year the cost of BIO certification would increase price of one hour of riding lesson by 4.15 CZK. This amount seems to be a negligible in comparison to the result of WTP-C of 154.6 CZK.

4.5. The consumer surplus

The consumer surplus was calculated as the amount in CZK respondent was willing to pay more above usual price for one hour of riding lesson if the place is certified as "welfare friendly" (Pc) minus the cost of certification. In total there were 45 respondent out of 64 who were willing to pay more than was the cost of certification.

Graph 17 – Consumer surplus result
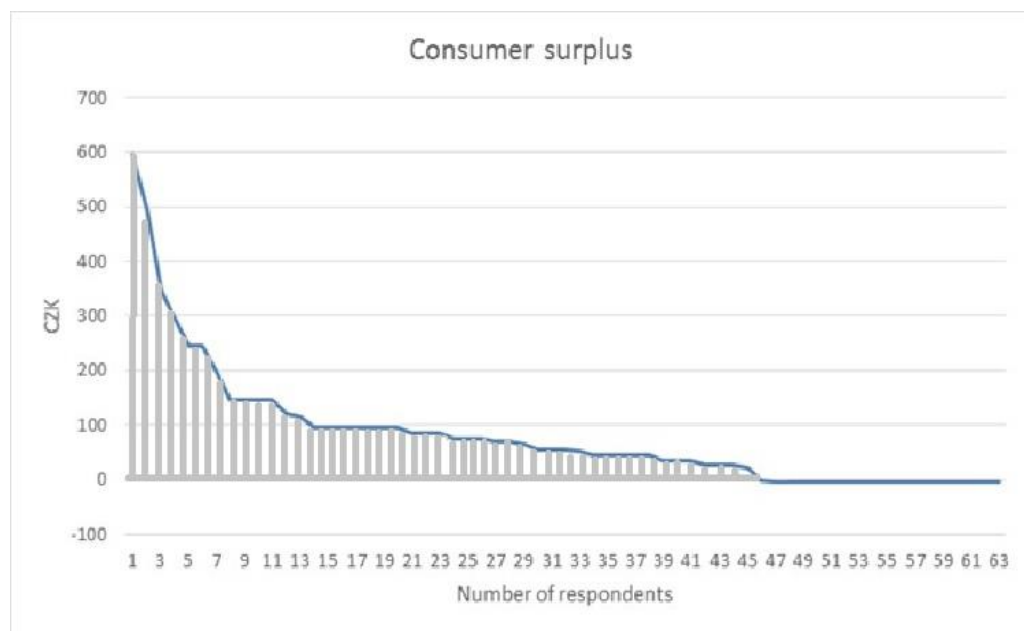
In this example the total consumer surplus was calculated as sum up of individual consumers (respondents) that was 5259.75 CZK and the average amount of 116.9 CZK. Graphical representation of consumer surplus after calculation is shown on the graph 17

above. On the axis y is price Pc in CZK and on the axis x is number of respondents. Which shows that 70.3% of respondent would gain some consumer surplus.

Considering possibility of using this framework in whole EU total customer surplus for some of the EU countries was calculated. Using available data about number of riding schools and result from this thesis of possible consumer surplus the approximate quantification of total consumer surplus in Euros[4] in some EU countries is demonstrated in table 8 below.

Table 8 – Total consumer surplus in some EU countries

Country	Number of riding schools	Price for 1hour riding lesson in Euro	Total consumer surplus in Euro
Austria	1400	15	283220
Belgium	1310	10	265013
Czech Republic	94*	10-20	19016
Finland	800	30	161840
France	4038	12	816887
Germany	7500	15	1517250
Great Britain	600	45	121380
Ireland	130	25	26299
Netherlands	400	20-30	80920
Slovenia	71	12-25	14363
Spain	592	15-30	119762
Sweden	1000	14	202300

Source: Source: BAREŠOVÁ, Equine Animal Welfare Certification for riding schools, 2014; data source: CV survey and Liljenstolpe, Horses in Europe, 2009

This calculation may be considered as a framework to demonstrate that "Equine Welfare Certification" may bring a total consumer surplus counted in hundreds of thousands Euros. This calculations were done in conditions that the willingness to pay in other European countries is similar as in the Czech Republic and all riding schools will have welfare certification. The average price for one hour of riding lesson is comparable and it can be suggested that in some countries, especially in Finland, Great Britain, or Netherland, the total consumer surplus would reach even higher amounts thus the consumers are used to

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[4] The Exchange rate for all calculations was 26 CZK for 1 Euro.

pay higher price for riding lesson. In the Czech Republic the total possible consumer surplus have reach 19 016 Euros that would be almost half million CZK.

5. Discussion and conclusion

This thesis has provide some important information and facts that may be possible use for further initiative to improve equine welfare in riding schools, gain consumer surplus and improve the asymmetry of information in horse riding industry. Surprising was detection of unsuitability of Canada as a location for welfare certification due to insufficient animal welfare legislation, which consider animal as property. In contrary to this fact South American countries as Brazil and Argentina are in the right direction to ensure the good welfare in the future. Nowadays farm animals in these countries have one of the best condition in welfare keeping, but unfortunately transportation or slaughter conditions are still in critical situation. The US are the second best option for implementation of equine certification, but the EU have been chosen as the most suitable, because people are willing to put more money in the horse industry.

The contingent valuation survey have filled just 38% of people who visited this survey online possibly due to their consideration to be irrelevant as respondent. The final number of respondent was 66 and the author is opened to discussion whether the personal interviews would not give better rate. Out of the total amount of respondent 81.81% considered himself/herself as a horse lover, which shows that target group was chosen correctly. 65.15% of respondents were horse owners, so the positive attitude to equine welfare should be ensured. Other question found out the way how people are making their choice where to go to ride and majority (44%) decide according to recommendation and just 9% use internet. Between other answers was mentioned personal visit of different places or influence by other familiar people. This question demonstrated the positive attitude of respondent to recommendation as it was confirm once more in the survey, when two more respondents would be willing to pay more for one hour riding lesson if the place would be recommended as "welfare friendly" that if the place would be certified. . The willingness to pay more was confirm by two thirds of respondent and in average they would pay 24.1% above the usual price. For certified place this average was 21.4%.

That the condition in which are horses kept is the most important factor when customers are choosing the place where to go to ride is very important and useful information for further research about implementation of the equine certification.

Next results demonstrate that there is insignificant difference in amount that are respondents willing to pay for one hour of riding lesson, in average 396.7 CZK, and one hour trail ride, in average 377.4 CZK

The social-economical background of respondent was found out to if there is a relation between it and willingness to pay. Majority of respondent were women (75.8%), in the group age from 18 to 25 (34.8%) and 26 to 35 (31.8%), mostly with finished University education (Bachelor or higher), with average monthly income under 15 000CZK. The social-economical background may have a significant effect on the result of this survey, because it was proved that women and people with low-income are more likely to have a positive attitude to animal welfare issues. (FAVER, 2013)

Multiple regression model have not found a significant relation between social-economical background variables and willingness to pay, which may just show the variety of survey respondents. Or it may inform that age, education, income, and gender do not influence the willingness to pay. If the respondents were willing to pay more they were willing to pay in average 154.6 CZK more.

An abstract case of average size horse eco-farm was demonstrated. A possible cost of certification was calculated using the real price list of BIOKONT which issue BIO label. From this pricelist the cost of certification 4150 CZK was counted for one farm with 30ha of land, 10 horses and 1000hours of riding lessons a year. From this assumptions a cost of certification for one hour of riding lesson was 4.15 CZK. The average amount of consumer surplus 116.9 CZK, was calculated by using data from CV survey. Applying this knowledge on whole Czech Republic the total consumer surplus in case that all 94 official riding schools would obtain welfare certification would be almost half million CZK for every riding lesson.

In the end of 2014 should be published a report by Eurogroup for Animals and the World Horse Welfare, which may be used to harmonized the legislation across the EU. Together with the Equine Welfare Assessment Protocol from Sofie Viksten better standards may be applied. To successfully implement equine welfare certification in the EU further and more detailed research how to harmonize mentioned works will be essential.

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Appendix 1- – Primary data obtained from questionnaire survey

RESPONDENT	price for riding lesson	% more if recommend	% more if certified	L	O	U	R	C	G	A	E	I	Recommended	Certified	Consumer surplus
1	500	20	20	1	1	3	1	1	1	60	4	50000	100	100	95,85
2	200	50	50	1	1	3	1	1	0	60	4	20000	100	100	95,85
3	250	5	20	1	1	2	1	1	0	32,5	2	20000	12,5	50	45,85
5	400	0	0	1	0	3	0	0	0	22,5	2	10000	0	0	-4,15
6	600	100	10	1	1	0	1	1	0	52,5	2	20000	600	60	55,85
7	200	20	20	1	1	2	1	1	0	22,5	3	10000	40	40	35,85
8	200	20	20	1	1	1	1	1	0	32,5	2	20000	40	40	35,85
9	200	0	0	0	0	0	0	0	1	32,5	4	50000	0	0	-4,15
10	200	0	0	0	0	2	1	0	1	32,5	2	20000	0	0	-4,15
11	300	25	25	1	0	1	1	1	0	32,5	4	30000	75	75	70,85
12	500	0	0	0	0	2	0	0	0	22,5	3	10000	0	0	-4,15
13	1000	0	0	0	0	0	0	0	1	32,5	4	10000	0	0	-4,15
15	300	100	100	1	0	2	1	1	0	22,5	3	10000	300	300	295,85
16	500	100	100	0	0	2	1	1	1	32,5	2	50000	500	500	495,85
17	300	0	20	1	0	2	0	1	0	32,5	4	20000	0	60	55,85
18	500	5	20	0	0	2	1	1	1	32,5	4	40000	25	100	95,85
19	500	20	20	1	0	2	1	1	0	22,5	4	10000	100	100	95,85
20	350	100	100	0	0	2	1	1	0	22,5	3	30000	350	350	345,85
21	400	20	20	0	0	2	1	1	0	22,5	3	10000	80	80	75,85
22	700	7	7	1	0	3	1	1	0	22,5	4	10000	49	49	44,85
23	500	0	0	1	1	3	1	1	0	22,5	4	20000	0	0	-4,15
24	500	49	15	0	0	0	1	1	1	22,5	3	10000	245	75	70,85
25	500	10	10	1	0	2	1	1	1	22,5	3	10000	50	50	45,85
26	500	10	10	1	0	3	1	1	0	42,5	4	10000	50	50	45,85
27	200	50	100	1	1	2	1	1	0	22,5	2	10000	100	200	195,85
28	200	0	0	1	1	0	0	0	0	32,5	2	20000	0	0	-4,15
29	400	20	20	1	1	2	1	1	0	32,5	2	20000	80	80	75,85
30	500	20	20	1	0	3	1	1	0	15	2	10000	100	100	95,85
31	500	10	20	1	1	0	1	1	0	52,5	2	40000	50	100	95,85
32	500	50	50	1	1	2	1	1	0	42,5	2	30000	250	250	245,85
33	350	0	0	1	1	2	0	0	0	22,5	2	10000	0	0	-4,15
34	300	0	0	1	1	2	1	1	0	32,5	4	20000	0	0	-4,15
35	500	0	0	1	1	0	0	0	0	52,5	4	20000	0	0	-4,15
36	300	0	50	1	1	0	0	1	0	32,5	3	10000	0	150	145,85
37	350	5	20	1	1	3	1	0	0	22,5	2	10000	17,5	70	65,85
38	200	50	50	1	1	1	1	1	0	22,5	3	10000	100	100	95,85
39	250	0	0	1	1	2	0	0	1	42,5	3	30000	0	0	-4,15
40	300	50	50	1	0	2	1	1	0	32,5	2	10000	150	150	145,85
41	300	10	10	1	1	2	1	0	0	22,5	1	10000	30	30	25,85
42	500	20	30	1	1	3	1	1	0	32,5	2	10000	100	150	145,85
43	500	0	0	1	1	2	0	0	0	22,5	2	10000	0	0	-4,15
44	400	0	0	1	1	2	0	0	0	52,5	4	30000	0	0	-4,15
45	250	10	10	1	0	2	0	0	0	32,5	4	10000	25	25	20,85
46	400	15	30	1	1	3	0	1	0	15	0	20000	60	120	115,85
47	250	0	0	1	1	2	0	0	1	52,5	2	50000	0	0	-4,15
48	1000	15	15	1	1	2	1	1	1	32,5	3	20000	150	150	145,85
49	250	50	50	1	1	2	1	1	0	22,5	3	10000	125	125	120,85
50	500	50	50	1	1	2	1	1	0	32,5	3	20000	250	250	245,85
51	250	25	23	1	1	3	1	0	1	22,5	4	30000	62,5	57,5	53,35
52	200	5	1	1	1	2	0	0	0	42,5	2	10000	10	2	-2,15
53	450	100	20	1	1	1	1	1	0	42,5	2	40000	450	90	85,85
54	450	100	20	1	1	1	1	1	0	42,5	2	40000	450	90	85,85
55	450	100	20	1	1	1	1	1	0	42,5	2	40000	450	90	85,85
56	300	10	10	1	1	3	1	1	1	22,5	2	10000	30	30	25,85
57	400	20	20	1	1	3	1	1	0	32,5	4	10000	80	80	75,85
58	500	0	0	1	1	2	0	0	1	42,5	2	20000	0	0	-4,15
59	400	0	0	1	1	3	0	0	0	32,5	2	10000	0	0	-4,15
60	200	20	20	0	0	0	1	0	0	32,5	4	30000	40	40	35,85
61	500	10	10	0	0	1	0	0	1	22,5	4	10000	50	50	45,85
62	400	10	15	1	1	3	1	1	0	15	1	10000	40	60	55,85
63	500	0	0	1	1	2	0	0	0	22,5	2	10000	0	0	-4,15
64	300	10	10	1	1	1	1	1	0	32,5	2	40000	30	30	25,85