

A new feature in the *Aust Vet J*

This is the first issue of a new initiative for the *Australian Veterinary Journal* to include highlights of abstracts of papers from local and international conferences.

The first conference to be profiled is the 18th Federation of Asian Veterinary Associations Congress (FAVA) which was held in November 2014. Hosted by the Singapore Veterinary Association, it attracted veterinarians from over 28 countries.

The congress theme *The Rise of the Asian Veterinary Profession* offered delegates the opportunity to have access to quality education, including major plenaries, and streams on small animal medicine, dentistry, as well as animal welfare and disaster management.

FAVA's vision is to be recognised by the public as the unified professional association serving the veterinary community and needs of the region. Its mission is to enhance the quality of life of the people in the region through the promotion of responsible animal care and welfare by a unified professional association.

One of their prime objective is to foster closer relationships and understanding among Asian veterinarians and veterinary associations. As well as the AVA, its current membership includes the veterinary associations of Afghanistan, Bangladesh, Hong Kong, India, Indonesia, Japan, Korean, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam.

The inclusion of selected abstracts from this meeting aims to raise the profile and to increase the awareness of FAVA and its roles, for AVA members.

For full details of the sessions and the papers, see <http://fava2014.com/scientific-information/speakers-presentations/>.

Anne Jackson
Editor in Chief



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18th Federation of Asian Veterinary Associations Congress

28–30 November 2014 Marina Bay Sands, Singapore

Selected abstracts reprinted from the conference proceedings

The human-animal bond & its relationship to animal welfare.

Golab GC. *Division of Animal Welfare, American Veterinary Medical Association, Schaumburg, USA*

Virtually everything that happens to animals, particularly domestic species, happens at the behest of people. Accordingly, how and why people relate to animals (human-animal interactions) is central to what happens to the people and animals in those relationships. Throughout history, people have initiated relationships with animals based on what those animals can provide for them (e.g. companionship, food, information about potential medical advances, assistance with work); however, it is essential that we recognize that human-animal relationships are a partnership and that the needs and wellbeing of the animal must also be addressed. Positive relationships with animals can increase interest in how they respond to what we ask of them, and create greater respect for animal sentience. Emotional attachments, in particular, can benefit animal welfare when they create empathy that results in better care. But, those attachments can also be the source of compromised welfare when we value our relationship with the animal over what the animal itself needs, or when they cause us to misinterpret what the animal needs. Veterinarians have a great responsibility and opportunity to improve their and others understanding of human-animal relationships and ensure that those relationships result in human actions toward animals that support their good animal welfare.

The rational use of antimicrobials in veterinary medicine to ensure their proper stewardship in minimising resistance and zoonotic potential – is the European experience relevant to Asia?

Jones P. *Past President, British Veterinary Association, London, United Kingdom*

Resistance to antibiotics in man is understandably causing considerable alarm on a global basis, and in Europe the debate on what is the major cause of this problem has become very polarised with some opinion leaders keen to blame non-human use of antibiotics particularly that in veterinary medicine and especially in food animals. In the past few years the BVA has been the driving force behind promoting responsible use in veterinary medicine in the UK and providing support for similar initiatives by the Federation of Veterinarians in Europe (FVE). Through its medicines working group, the BVA has been responsible for undertaking key initiatives to ensure its members are fully aware of their obligations to use these medicinal products carefully, to design appropriate continuing professional development programmes, to emphasise the need for adequate teaching on the subject in the curricula of veterinary schools and to work with other stakeholders in the animal health and welfare community to ensure that it's the right drug for the right bug that is used, and as little as possible but as often as is needed. The paper will describe these various initiatives to demonstrate the commitment of the veterinary profession both in UK and in Europe as a whole, to controlling one of

the most serious threats to global human and animal health in the 21st century, the outcomes so far achieved and how the experience gained can be put into practice in the countries represented by FAVA.

From core competencies to outbreak response – a year in the life of the South East Asia One Health University Network (SEAOHUN).

Fenwick S. *Department of Infectious Diseases and Global Health Cummings School of Veterinary Medicine, Tufts University, Boston, USA*

SEAOHUN was established in December 2011 and a work plan was created with reference to the vision, mission and objectives of the network, and to the aims of the Emerging Pandemic Threats program, to build capacity across disciplines and sectors to respond to outbreaks of emerging infectious diseases following the One Health approach. Activities linked to Objective 1 – ‘To build cadres of trained professionals to be future leaders in One Health’ – were aimed at developing a set of regionally relevant One Health Core Competencies that could be used by member faculties to map curricula, identify gaps and develop appropriate courses to train individuals with the skills, knowledge and attitudes to be future leaders of programs and activities designed to investigate, monitor, respond to and prevent, emerging infectious diseases. Activities linked to Objective 2 – ‘To improve the competencies of One Health professionals’ – were aimed at transforming the information into action, with production of a set of OH modules and innovative ways to integrate and teach these modules in existing and new undergraduate and postgraduate curricula. In addition, activities implemented under Objective 3 – ‘To build a One Health evidence base through research investigations’ and Objective 4 – ‘To promote and advance the One Health approach for control of emerging and re-emerging infectious and zoonotic diseases’, aimed to alter the way that universities taught health-related disciplines and engaged with stakeholders to establish their role in the global fight against infectious diseases.

Disaster management

Asia-Pacific: leading the way protecting animals in disasters.

Dacre I. *Senior Veterinary Adviser, World Animal Protection Asia-Pacific, Bangkok, Thailand*

The health and safety of people in disasters is increasingly being linked to the fate of their animals. Recent research on animals in disasters highlights the intrinsic connection people have with animals on both emotional and economic levels. Mounting evidence suggests people will compromise their own safety in order to protect their animals. This confirms what World Animal Protection has seen in its disaster work: animals are valuable and integral members of families and communities that must be cared for following natural disasters. Having plans in place to protect animals means people will not put their own lives at risk by refusing to evacuate or returning to care for abandoned pets and livestock. Asia-Pacific nations are leading the way in recognising this link and organisations and governments are protecting animals through improved training and disaster planning. Ultimately, through awareness and training they are empowering animal owners to save the whole family, including their animals. India is already integrating animals into national disaster strategies

and training large numbers of professionals to work in Veterinary Emergency Response Units. In Australia, following the 2009 Black Saturday bushfires, in a landmark move, national, state and territory governments have endorsed a new approach allowing animals to be officially included in disaster management plans. In order to improve animals’ lives we need to recognise the intrinsic connection between animals and people and the key role they play in supporting livelihoods, food security and companionship for people the world over.

Animals in Disasters – A New Zealand approach.

Ricketts W. *Programme Manager Disaster Management Asia-Pacific, World Animal Protection, Wellington, New Zealand*

New Zealand is highly susceptible to adverse weather events, such as flooding, snowstorms, and cyclones. Climate change is expected to impact significantly on the frequency and magnitude of these events. Its geographic location, at the juncture of the Pacific and Australian tectonic plates, makes it highly vulnerable to earthquakes, volcanic eruptions, tsunamis, and landslides. New Zealand’s economy is heavily reliant on primary production from the livestock sector. The potential loss in gross output to the agriculture industry from livestock perishing due to adverse events is highly significant. Using World Animal Protection’s Pillars of Change model i.e. policy statement, legislation, national coordination and coordination, New Zealand is well on the way to embedding a sustainable model for animal welfare in emergencies. The 2013 New Zealand Animal Welfare Strategy states a clear policy statement for the requirement for contingency planning for and responses to adverse events’. The Ministry for Primary Industries (MPI) is the responsible agency at the national and regional level for the coordination of the planning and provision for the welfare of all animals in emergencies. MPI’s new role will be legislated in the revised MCDEM National Civil Defence Emergency Management Plan, which will come into force in the first half of 2015. As part of its role as responsible agency role. MPI is currently carrying out a stocktake of assets for the management of animal welfare in emergencies.

Australia’s animals in disasters: What have we learned and what have we done?

Murray JG, *Canberra, Australia* and Mills JC. *World Animal Protection, Sydney, Australia*

Globally there has been an increase in natural disasters in recent years. In Australia, natural disasters are inevitable, often unpredictable, and include floods, storms, bushfires and tropical cyclones. Australia has endured around 265 natural disasters over the last 30 years resulting in significant social and economic costs. The 2011 National Strategy for Disaster Resilience recognises that the benefits of improved disaster management extend beyond the protection of human life and property to the broader social environment. In addition, there is a growing evidence base supporting the inclusion of animals in disaster planning in recognition of their intrinsic value, economic value, and contribution to human health and well-being. As a result, a multi-sectoral interim National Advisory Committee for Animals in Emergencies (NAC) was established in 2013 to, inter alia, provide advice on the integration of animals into emergency management planning. The NAC has developed non-prescriptive National Planning Principles to provide guidance for government and other stakeholders on the planning process and local disaster management plans. The

NAC also provides advice on matters such as R&D, communications, and submissions on animals in disasters to government agencies. The adoption of the planning principles will lead to improved outcomes for humans and animals in emergencies.

Animals in Disasters - An integrated approach from India.

Ricketts W. *Programme Manager Disaster Management Asia-Pacific, World Animal Protection, Wellington, New Zealand*

India is vulnerable to natural disasters such as earthquakes, floods, cyclones and drought. During last three decades, the country has suffered over 400 major disasters. Each year India suffers average disaster losses of US \$1 billion. Direct natural disaster losses amount to 2% of India's Gross Domestic Product and up to 12% of central government revenue. Hundreds of thousands of animals suffer during disasters in India annually because they are not a priority in disaster management plans and programmes. On average nearly 95000 cattle are lost annually. India has a vertically integrated disaster management structure with the National Disaster Management Authority the apex authority on disaster management in the country, cascading down to state and then district levels. It is intended that animal welfare will be integrated into India's national disaster management plan and programmes as well as a number of State Disaster Management Authorities policies, plans and programmes by 2017. This will have a positive impact on the millions of animals in India and their owners by building resilient communities and protecting livelihoods. India has a National Disaster Response Force which is a disaster response agency under the National Disaster Management Authority. It was established in 2009 for disaster management and specialised response to natural and manmade disasters. It consists of ten battalions of Central Armed Police Forces and functions at a state and central level. Veterinary teams associated with the battalions are developing animal welfare expertise in disasters.

Animals in disasters – a Thai approach.

Sailasuta A. *Secretary General of Federation of Asian Veterinary Associations, Department of Pathology, Faculty of Veterinary Science, Chulalongkorn University, Bangkok, Thailand*

In general, there are not so many natural disasters occurring in Thailand. Since November 2011, the worst flooding in half a century has happened. Waters submerged one-third of the country, left nearly 700 dead, and caused millions in economic damage and lost revenue from major. Many sectors had participated on rescuing both people and animals. The Department of Livestock development, Ministry of Agriculture and Cooperative, Royal Thai Government had played an important role on helping the animal both livestock and companion animals. In addition, the Veterinary and Remount Department, Royal Thai Army, all the Veterinary Schools, Veterinary Associations; Thai Veterinary Medical Association under Royal Patronage, TVMA and Veterinary Practitioner Association of Thailand, VPAT also contributed their veterinary specialists on helping the animal in those flooding. During 2 years after the biggest disaster, there are many seminars and workshop conducted on the disasters. Since 2013, the World Protection Animal, WPA has facilitated the national committee on the disaster management. All the stakeholders as well as the Department of Disaster Prevention and Mitigation, DDPM, Ministry of Interior and Thai Red Cross have agreed to proceed with a letter of Agreement on this task. The plan is now progressing and will be soon implemented as a national plan for the disaster of Thailand in the near future.

Surviving the Cyclone: Lessons learned from recovering from a major disaster.

Myaing JT. *President, Myanmar Veterinary Association, Yangon, Myanmar (Burma)*

Myanmar ranks first as the most at risk country in Asia in the Pacific according to the UN Risk Model. The likelihood for medium to large-scale natural disasters to occur every couple of years is high, according to historical data. Severe Cyclonic Storm Nargis hit seriously, eastward moving at low-latitude as a strong tropical cyclone that caused the worst natural disaster in the recorded history of Myanmar. The cyclone Nargis made landfall in Myanmar on 2 May 2008, hit 40 km up the densely populated Irrawaddy delta causing catastrophic destruction and at least 138,000 fatalities. Another cyclone Giri that struck Myanmar's western coastal Rakhine state on 22 October 2010 affected 170,000 people. Key factors and lessons learnt from these cyclones are requirement of local permanent relief logistics facilities; transportation; preparedness of human resource and co-ordination between different parties. It is equally important that humanitarian organizations work through their government partners to invest in disaster risk reduction so that high risk countries have country-specific contingency plans which are regularly reviewed, practical, and in place for the most likely emergency scenarios. Today, the government has been working to improve its early warning capacity through the country's Department of Meteorology and Hydrology, whose primary responsibility is to provide early warning to the higher authorities, local government, disaster risk reduction agencies, media, international and local NGOs, and general public. The Republic of the Union of Myanmar is committed to disaster risk reduction, has systems and procedures at national, state/region, district, township, wards and village tracts levels for disaster management.

Cyclone Haiyan/Yolanda: the formation of AARPh.

Cresencio RO and Plata LA (*Department of Agriculture, Bureau of Anima/Industry, Quezon City, Philippines*); Jayme SI, GARC, *Global Alliance for Rabies Control, Sta Rosa City Laguna, Philippines*

Due to its geographical location, the Philippines is frequently visited by typhoons which oftentimes lead to loss of lives and economic activities. In November 2013, the worst cyclone hit the Central Visayas area of the country. Considered as the strongest recorded typhoon in history, Yolanda (internationally known as Haiyan), caused about 6,340 human deaths and losses amounting to \$15 billion in infrastructures and agriculture, including animals. Immediately after the disaster, many non-government organizations responded to provide animal care and relief support. In order to coordinate the various activities, an inter-agency mechanism called Animal Relief and Rehabilitation Philippines (ARRPh) was formed. The Bureau of Animal Industry (BAI) of the Department of Agriculture of the Philippines, became the incident command center of ARRPh. In order to sustain the initiative, ARRPh has been institutionalized as a program of the BALta respond to any emergencies. The main objective of the network was to ensure that the welfare of the animals, animal health, public health and livestock industry are given focus without hampering the humanitarian efforts during disasters. ARRPh mainly coordinated the activities of the different livestock government offices, animal welfare groups and veterinary organizations to minimize duplication of operations in the affected areas; share information on the situation in the field; and pool available resources. This paper describes how a centralized approach can be implemented when responding to disasters. It also highlights the importance of

government and non-government collaboration to be able to provide immediate assistance for animals in need during disasters.

Animal welfare

Animal welfare: a global overview including veterinary leadership challenges and opportunities and the role of world animal protection as a strategic partner for the veterinary profession.

Bayvel D. *Chief Veterinary Adviser, World Animal Protection, London, United Kingdom*

This presentation will approach animal welfare as a complex, multifaceted, international public policy issue with scientific, ethical, economic, cultural, religious and political dimensions, plus important trade policy considerations. Details will be provided regarding the historical and current involvement of veterinarians in animal welfare policy and practice, at both an individual and organisational level. Emphasis will be placed on the vital improvements made in animal welfare by disease control and other day-to-day work of veterinary clinicians, but with recognition of the ethical significance and expanded responsibilities and opportunities afforded by specific inclusion of animal welfare in a Veterinary Oath. Related topics to be addressed include developments in animal welfare-related education and research; the establishment of multi-disciplinary governmental and non-governmental expert advisory committees; the roles of veterinary associations, industry- and nongovernmental organisations, plus other stakeholder groups (with similar or parallel interests); positive and negative effects of the marketplace; international standard-setting; public-private partnerships; and political and social considerations, including shifts in gender balance within the profession. It will be argued that the veterinary profession must continue to give priority to addressing strategically important animal welfare leadership challenges and opportunities, if it is to meet current and future societal demands and expectations, regionally, nationally, and internationally. As the pre-eminent international animal welfare NGO, with MoU-based relationships with the OIE, CVA, WVA and FAVA, details will be provided of current World Animal Protection priority activities involving Animal Welfare Education, Disaster Management, Vaccination of Dogs for Rabies Control and Humane Sustainable Agriculture, plus other specific strategic initiatives.

Fundamental and developing concepts of animal welfare.

Mellor DJ. *Animal Welfare Science and Bioethics Centre IVABS, Massey University, Palmerston North, New Zealand.*

Sentient animals can suffer, i.e. they can have negative experiences. Such experiences may occur independently or as a result of the way people treat animals. Understanding the nature, causes and minimisation of suffering has been the *raison d'être* of animal welfare science since its emergence as a discrete discipline 25-30 years ago. During that period the scientific understanding of suffering has developed through several different stages, each one of which depended on the methods then available to study animals' negative experiences. A wide range of negative experiences is now considered to be potentially relevant to animals. They are of two major types: first, those that are

internally-generated and motivate animals to behave in ways that are critical for their survival, such as breathlessness to maintain oxygen supply, thirst to elicit drinking water, hunger to promote eating food, and pain to minimise or avoid injury; and second, those that reflect the animals cognitive perception of their external environment, such as, fear, loneliness or boredom which reflect threatening, solitary or stimulus-poor circumstances. Additional negative experiences of these two types include, respectively, nausea, dizziness, weakness, malaise and sickness, and anxiety, helplessness, frustration and anger. Now, animals are also understood to have positive experiences, including feelings of reward associated with exploration and food acquisition in stimulus-rich environments and affiliative interactions of bonding and bond affirmation, care of young, play and sexual activity. Thus welfare management should aim both to minimise negative experiences and to provide opportunities for animals to have some positive experiences.

The OIE AFEO Regional Animal Welfare Strategy (RAWS).

P. Matayompong, *Department of Livestock Development, Department of Livestock Development, Bangkok, Thailand*

Animal health, production and food safety are critically related to animal welfare. The World Organisation for Animal Health (OIE) has developed the science-based internationally agreed standards to improve animal welfare globally. Animals are an important part in the socioeconomic development of Asia, the Far East and Oceania (AFEO). To support implementation of the OIE animal welfare standards in AFEO, a Regional Animal Welfare Strategy (RAWS) was developed in 2008. The RAWS vision is a region where the welfare of animals is respected, promoted and incrementally advanced, simultaneously with the pursuit of progress and socioeconomic development. The vision is reflected in the RAWS four priority goals and their supporting objectives and specific activities. The RAWS represents an overarching framework to facilitate implementation of the OIE standards, coordinate animal welfare activities and address emerging issues. It has been endorsed by the OIE and also served as a model for other regions. In April 2011, the RAWS Coordinating Group was established to develop and monitor the RAWS implementation. The group supported by Australian Government meets once or twice a year resulting in a number of recommendations being provided to the OIE. The first edition of RAWS (2008-2012) led to good progress on animal welfare in many countries. The second edition (2013-2015) updated the first edition by providing a direction for future improvements to the welfare of animals without changing its principles and vision. Ultimately, the development of detailed national animal welfare strategies is the responsibility of member countries.

Animal welfare: Current approaches in Myanmar.

Myaing TT. *President, Myanmar Veterinary Association, Yangon, Myanmar (Burma)*

Concern for animal welfare is often based on the belief that non-human animals are sentient and that consideration should be given to their well-being or suffering, especially when they are under the care of humans. Today it is a significant focus of interest in science, ethics, and animal welfare organizations. Myanmar is the largest country in Southeast Asia, with a population of 62.4 million people. A survey by the World Health Organization in 2003 gave an estimate of approximately 3.48 million dogs in the country. Myanmar has a rapidly-growing population of homeless dogs, particularly in the

cities. There are a limited number of non-profit dog shelters in Myanmar. One famous livestock shelter that includes pet animals is situated at upper Myanmar. All these shelters are dedicated to the rescue and care of stray animals of homeless, sick, injured or under threat of poisoning. Myanmar has limited formal system of animal welfare, so homeless animals have no choice but to roam the streets, posing both a nuisance and a danger. When Cyclone Nargis hit in May 2008, over 50% of the country's livestock was killed. In the Ayrrawaddy Delta, almost half the draught animals and a third of all pigs, goats, poultry and ducks were lost while World Society for the Protection of Animals (WSPA) Disaster Assessment and Response Team focused on the survival rate and welfare of the remaining draught animals by treating injuries, vaccinating against seasonal diseases and advising on restocking issues in coordination with Myanmar government.

Animal welfare during (Halal) slaughter.

Sira A. *President, Commonwealth Veterinary Association, Retd. Dean, Bangalore Veterinary College, Bangalore India, Chairman, World Organisation for Animal Health(OIE) Animal Welfare Working Group*

Islam provides considerable support for the importance of animal welfare. There is a rich tradition of the Prophet Mohammad's (*pbuh*) concern for animals to be found in the Hadith and Sunna and Islam provides considerable support for the importance of animal welfare. The Quran is explicit, with regard to using animals for human purposes. Many current practices in the production of animal products for halal consumption are not in accordance with the teachings of Islam and may result in great cruelty to animals which may compromise the production of meat from such animals as halal. Many Muslims and Islamic religious leaders are not aware of the cruelty that may be routinely inflicted on animals during transport, pre-slaughter and at slaughter in many Islamic countries. There is an urgent need to sensitise all Muslims to the teachings on animal welfare in the Quran and the Hadiths. This approach is bound to be more effective in influencing the majority of Muslims in the livestock trade especially the slaughter man in treating animals more humanely thus making the meat halal for human consumption. This needs to be done by intervention at the highest level by Religious bodies and organisations, which could be most effective in giving rulings (fatwas) on this.

The OIE Animal Welfare Codes.

Abila R. & Kukreja K. *OIE Sub-Regional Representation, South-East Asia, Bangkok, Thailand*

With a mandate from its members to take the lead internationally on animal welfare, the OIE has had Animal Welfare identified as a priority in its Strategic plan since 2001–2005 and has had an Animal Welfare Working Group (AWWG) to help review the setting of standards. The OIE has developed standards for animal welfare through the work of leading experts in the animal welfare field. Member countries are also given ample opportunity to comment on standards, with revisions made as necessary before proposed for adoption. In accordance with OIE's democratic standard-setting procedures, these standards have then been reviewed by the Animal Welfare adopted by the OIE's General Assembly, in which all members have a vote. These standards cover several aspects of animal welfare, including the transportation of animals by different modes, slaughter in different contexts, use of animals in research, and stray dog population control. It should be noted that more standards and recommendations are being developed

to cover these aspects for a larger number of systems and/or species groups, as well as to address certain challenges such as religious slaughter, laboratory animal welfare, and other pressing issues. Standards are also regularly brought up to date in relation to new scientific findings, and are readily available to the public.

One Health

FAO/OIE/WHO collaboration at the global level and implications for networks in SE Asia.

JG Murray, *Special Adviser, OIE, Canberra, ACT, Australia*

Over the last 20 years or so, 75% of emerging infectious diseases such as HIV AIDS, BSE, Henipah viruses. SARS, Ebola, and influenzas have been zoonotic with significant adverse social and economic impacts. Factors predisposing to disease emergence include population growth and demands for animal protein, agricultural intensification, increased global travel and trade, deforestation, environmental degradation and climate variability. These have resulted in increased linkages between humans, wildlife and domestic animals and have altered the ecology of infectious agents. Risks of emerging infectious diseases have increased. Given these clear warnings, the FAO, OIE, and WHO entered into unprecedented collaborative efforts to coordinate global activities to address health risks at the animal-human – ecosystems interface. Common actions on three flagship topics – rabies, antimicrobial resistance and zoonotic influenzas – have been agreed and approaches have applicability to other diseases. Joint actions include the development of early warning systems, influenza surveillance advisory networks, and in-country animal and human health services capacity building. However it is up to countries to implement One Health measures, i.e. the promotion of health through inter-disciplinary study and actions across all animal species, and for regional organisations to provide political and technical leadership. ASEAN countries such as Singapore, the Philippines, Malaysia, and Laos PDR have introduced One Health collaborative frameworks. The development of national animal and human health systems to detect, prevent, and control these diseases will also be necessary to mitigate risks both to themselves and other countries.

Strengthening Communication Pathways in the context of One Health – an Asian Focus.

Jones P. *Past President, British Veterinary Association, London, United Kingdom*

The Federation of Asian Veterinary Association and its member associations are at the forefront of representing their members on key issues affecting animal health and welfare, and their impact on human health for the public good. The associations are consequently in a unique position nationally and regionally to underscore the importance of the veterinarians contribution to One Health. We must therefore ensure that our ability to communicate is well organised and prepared to the highest standard, and used to maximum effect to convince the public, the media, policy makers and government that the veterinary profession can provide solutions to the challenges facing animal and human wellbeing in the countries concerned The paper will describe how experiences gained by the British Veterinary

Association (BVA) have succeeded in meeting the challenge of strengthening communication pathways in pursuit of its strategic objectives in progressing the concept of One Health, and will go on to propose how such measures can be used on a wider basis in Asia. Examples of building alliances with key influencers in different organisations and allied professions on single and multiple issue topics will be described, while emphasising the importance and influence of personal professional relationships in securing a working environment based on trust and mutual understanding. How these relationships in turn can ensure that communication succeeds in promoting the value of the veterinary profession in society, and to achieve its goals and ambitions, will also be discussed.

Animal health and zoonoses – costs, prevention and management.

Field HE. *EcoHealth Alliance, EcoHealth Alliance, Brisbane, Australia*

The risk profile of emerging zoonoses is one of low likelihood but high consequence. Nearly 75% of all emerging infectious diseases that threaten human health are zoonotic. The majority have spilled from wildlife reservoirs, either directly to humans or via domestic animals. Those involving domestic species have cascading social, industry, trade, and broader economic ramifications. Nipah virus and SARS provide illustrative case studies. The emergence of Nipah virus in Malaysia in 1998 resulted from spill over of virus from the natural bat reservoir to pigs, and was associated with the encroachment of commercial pig farms into natural habitat areas. Once the virus spilled from its natural host into the immunologically naive pigs, high pig and farm densities facilitated the rapid dissemination of infection locally. The movement of pigs for sale and slaughter in turn led to the spread of infection to southern peninsular Malaysia, where the high-density, largely urban pig populations facilitated transmission to humans. The emergence of SARS followed spill over from bats to civets and other food species in the wet markets of Guangdong province in southern China in 2003. Identifying the factors associated with the emergence of SARS requires firstly, an appreciation that, although these were wildlife species, they were a market commodity, and secondly, an understanding of the ecology of infection in both the reservoir species and in secondary market amplifying species. A fundamental extension of this is an understanding of the wildlife trade, and of the social and cultural context of wildlife consumption.

Dog population management in rabies control in India.

Sira A. *President, Commonwealth Veterinary Association, Retd. Dean, Bangalore Veterinary College, Bangalore India, Chairman, World Organisation for Animal Health(OIE) Animal Welfare Working Group*

Rabies is endemic throughout the country except for the islands of Andaman and Nicobar and Lakshadweep. Data on animal rabies is very scarce and there is no organized system of surveillance to assess the disease burden annually. Molecular epidemiological studies on Indian isolates need to be undertaken. The dog (97%) is the principal vector followed by cats (2 %) and others such as cattle, sheep, goats, horses, pigs, camels and monkeys. The pet dog population is about 28 million and an equal number are estimated to be stray. The role, approaches to and effectiveness of Rabies control are not well defined. Though it is the mandate of the Government Veterinary Services it is often animal welfare organizations supported by Animal Welfare Board of India, through the Municipal corporations, which are involved in vaccination of dogs as a part of catch neutering release programmes. In some cities dog population has been stabilised by

neutering of dogs and vaccination coverage done which has resulted in control of both canine and human rabies. The main obstacle in preventing canine and human rabies in India is the lack of sustainable centralized effort and the fact that rabies by law is not a notifiable disease. The affliction of domestic animals of economic importance by rabies in rural areas is an important public health concern. People in rural areas are largely ignorant of the disease. The myths and traditional practices further compound this problem. The curriculum in the medical, veterinary and other health sciences colleges does not emphasise the importance of this deadly disease. An effective and economical tool to combat rabies would be the oral immunization of stray dogs as a complementary to parenteral immunisation. Newer oral vaccine to suit Indian conditions have been developed and are in the process of being tried. Community empowerment projects for Rabies control have been highly successful.