

The SAPUVETNET Projects: experiences of intersectoral collaboration and research/training in veterinary public health across Latin America and Europe

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Summary - SAPUVETNET is the acronym of “Red de Salud Publica Veterinaria/Network of Veterinary Public Health”, a series of projects co-financed under the EU ALFA program, aimed to support an International network on Veterinary Public Health (VPH) constituted by Faculties of Veterinary Medicine from Latin-America (LA) and Europe (EU) (<http://www.sapuvetnet.org>). Since its start in 2002, SAPUVETNET has been continuously growing and expanding, and now it also includes several International collaborating institutions/organizations. The SAPUVETNET projects have envisaged a series of objectives/activities aimed to promote and enhance VPH research/training and intersectoral collaboration across LA and EU. Project partners use a mail-list and distance learning platforms (e.g. Moodle, Colibri) to organize common teaching activities. Major results so far achieved are: harmonisation/development of a common VPH curriculum; creation of common modules/courses on selected VPH topics; use of innovative teaching methods, based on problem solving approach/case studies; publication of videos (DVDs) and self-learning program (CD-ROM) on meat inspection/hygiene (in 3 languages); development of an on-line VPH teaching Manual (beta version in Spanish); organization of e-conferences on upcoming VPH issues; publication of a new International VPH Journal “Una Salud/One Health/Uma Saude” (in 3 languages); exchanges of teachers/researchers (e.g. bilateral visits LA-EU-LA) and coordinating meetings; participation in and/or organization of VPH seminars/congresses/conferences at National and International level; publication of scientific and popular articles on VPH issues related to project activities. SAPUVETNET didactic tools have been and/or are being tested/used by partner faculties/universities and other teaching institutions. Didactic material can be freely circulated and distributed, and can be used for distance learning, be modified/adapted to the local context of any country/geographical area, even outside LA and EU.

Key words: Inter-professional collaboration, *One Health* approach, Veterinary Public Health education, Latin America and Europe.

I progetti SAPUVETNET: esperienze di collaborazione intersettoriale e ricerca/formazione in Salute Pubblica Veterinaria tra America latina ed Europa.

Riassunto - SAPUVETNET è l'abbreviazione di "Red de Salud Publica Veterinaria/Rete di Salute Pubblica Veterinaria", una serie di progetti cofinanziati nell'ambito del programma UE ALFA, finalizzati a supportare una rete internazionale di Salute Pubblica Veterinaria (SPV) formata da Facoltà di Medicina Veterinaria dell'America Latina (AL) e dell'Europa (UE) (<http://www.sapuvetnet.org>). Fin dal suo inizio nel 2002, SAPUVETNET è continuamente cresciuto e si è ampliato, ed attualmente include anche numerose organizzazioni ed istituzioni partner internazionali. I progetti SAPUVETNET avevano previsto una serie di obiettivi ed azioni mirate a promuovere e migliorare la ricerca-formazione in SPV e la collaborazione intersettoriale tra AL ed UE. I partner del progetto utilizzano una *mail-list* e piattaforme per formazione a distanza (es. Moodle, Colibri) per organizzare attività formative comuni. I principali risultati finora raggiunti sono stati: armonizzazione/ sviluppo di un *curriculum* comune in SPV; creazione di moduli didattici/corsi comuni su specifici argomenti di SPV; uso di metodi didattici innovativi basati sull' approccio "soluzione di problema"/"studio di caso"; realizzazione di video didattici (DVD) e di un programma di auto-apprendimento (in CD-ROM) su ispezione ed igiene delle carni (in 3 lingue); sviluppo di un manuale didattico on-line su SPV (versione Beta in spagnolo); organizzazione di conferenze elettroniche su temi di attualità in SPV; pubblicazione di una nuova rivista internazionale di Salute Pubblica "Una Salud/Una Salute/Uma Saude" (in 3 lingue); intercambio di docenti/ricercatori (es. visite bilaterali AL-UE-AL) e riunioni di coordinamento; partecipazione in e/o organizzazione di seminari/congressi/conferenze su SPV a livello nazionale ed internazionale; pubblicazione di articoli scientifici e divulgativi su tematiche di SPV legate ad attività dei progetti. I materiali didattici SAPUVETNET sono stati testati/usati e/o sono in corso di validazione dalle Facoltà/Università partner dei progetti e da altre istituzioni. Tali prodotti possono essere usati anche per educazione a distanza, possono essere liberamente circolati e distribuiti, e modificati/adattati ad altri contesti locali di qualsiasi paese ed area geografica, anche al di fuori di AL ed UE.

Parole chiave: Collaborazione inter-professionale, Approccio *Una Salute*, Formazione in Salute Pubblica Veterinaria, America Latina ed Europa

INTRODUCTION AND BACKGROUND

According to the World Health Organization, the most recent and valid definition of Veterinary Public Health (VPH) is "the sum of all contributions to the physical, mental and social well-being of humans through an understanding and application of veterinary science" (WHO, 2002). According to this definition, Ortega *et al.* (2004; 2007) stated that veterinarians play an important role in different topics related to VPH, such as: i. improvement of management strategies on animal movement to prevent diseases emergence and their spread around the world; ii. animal welfare promotion as a way to improve food production methods and respond to consumer demands; iii. development of preventive strategies related to specific production systems, e.g. antimicrobial resistance and environmental impact; iv. sustainable management of the environment and the prevention of negative effects on human and animal populations; v. protection of both animal and public health through new health policies at national and international level; vi. International cooperation in the management of animals in areas affected by disasters; vii. humanitarian assistance to countries affected by wars where animal populations are a survival resource for humans.

The field of Veterinary Public Health has undergone drastic developments during the last decades (OPS-OMS, 2001; 2003): intensification of animal production systems, appearance of emerging and re-emerging zoonoses, as well as the risks of residues in the environment and in food of animal origin are issues of great concern, not only to decision-makers, but also to consumers. The globalisation of trade (incl. live animals, products of animal origin), increase in tourism and human movements in

general pose a constant risk for diseases to be spread around the World. At countrywide level, there is a strong need to have common plans for disease control -for both human and animal diseases- not only for those ones (diseases/zoonoses) already well known in the respective geographical contexts; all countries need to be prepared for the introduction of exotic diseases that might have an impact on human and animal health. Diseases such as Bovine Spongiform Encephalopathy (BSE), the recent outbreaks of Avian Influenza and other emerging zoonoses, the dioxin scandals and others have had a tremendous impact on animal production and on the consumer's concern. Veterinarians play an important role as they are involved in all issues concerning animals and their products in relation to human health. In addition to the involvement in food-safety, disease surveillance and control, veterinarians -and other health professionals alike- are more often confronted with new challenges which require closer intersectoral collaboration. New diagnostic tools as well as changing legislation demand for the veterinarian of the 21st century to meet the challenges of the changes in the profession, especially with regard to safeguarding public health. In fact the role of vets "curing animals" has been progressively shifting towards a more integrated approach in which the veterinarian has to assure the quality and safety of products of animal origin throughout the whole production process (From Farm to Fork), and to integrate within the so-called "One Health approach". This is a relatively new concept for establishing a more holistic approach to preventing epidemic/epizootic disease and for maintaining ecosystem integrity for the benefit of humans, domesticated animals and the biodiversity

(<http://www.oneworldonehealth.org/>) through the co-equal collaboration between health and environmentally related disciplines (vets, medical doctors, nurses, biologists, agriculturalists, etc.) (<http://www.onehealthinitiative.com/>).

Project(s) Aims and Objectives

The purpose of the SAPUVETNET projects was at first to establish a network in the field of education in Veterinary Public Health (VPH) involving Veterinary Faculties of Europe and Latin-America. Besides the development/harmonisation of the VPH curricula, the network also envisaged creating common training modules and to introduce innovative educational methods. The network also intended to evaluate and validate the newly introduced teaching methods/didactic tools for their suitability under the respective prevailing conditions, and subsequently disseminate the products to other Veterinary Faculties outside the SAPUVET network. After the first phases, the project network deemed it interesting to contribute more toward training of professionals adequately prepared to evaluate situations, and find solutions for public health-related problems within the “One World, One Health”. Besides trying to implement the concept of “One World, One Health”, the SAPUVETNET partners have been also actively working to contribute towards the Millennium Development Goals (MDG) (<http://www.un.org/millenniumgoals/>). In particular, the project partners strongly believe that searching for local solutions to global public health problems can play an important role to reach some of the MDGs. Education and research in Veterinary Public Health can play an important role in this respect. In the last phase of SAPUVETNET projects, the network partners are trying to bring LA and EU even more close by proposing common VPH courses and common rules for curricula accreditation among the participating veterinary faculties/schools.

The main aims and objectives of the SAPUVETNET projects, with special reference to training modules/teaching tools, have been reviewed by several project partners -amongst them- Ortega *et al.* (2003; 2004; 2005), De Meneghi *et al.* (2007; 2011), and Vilhena *et al.* (2011).

Partner Universities, collaborating Institutions /Organizations and Universities: the SAPUVET network was first initiated by Veterinary Faculties from 3 European countries (Italy, Spain, The Netherlands) and 5 from Latin-American countries (Argentina, Costa Rica, Cuba, Nicaragua, Peru), plus a collaborating Institution, the WHO/OIE/FAO Collaborating Centre for Training & Research in VPH. Eventually, during the development of the projects SAPUVETNET II and III, the number of European and Latin American partners more than doubled, totalling now 5 European and 11 Latin-

American official partner Universities, plus 12 collaborating Institutions/Organizations and Universities. Overall, the activities of the SAPUVETNET projects have been/are being developed through the collaboration and contribution of the following Universities and collaborating Institutions/ Organizations:

- Universiteit Utrecht (UU), Utrecht, The Netherlands*
- Università degli Studi di Torino (UNITO), Grugliasco-Turin, Italy*
- Universidad de Zaragoza (UNIZAR), Zaragoza, Spain*
- Universidad Agraria de La Habana (UNAH), S.Josè de las Lajas-La Habana, Cuba*
- Universidad Nacional de Costa Rica (UNA), Heredia, Costa Rica*
- Universidad Nacional Autónoma de Nicaragua (UNAN), León, Nicaragua*
- Universidad Peruana Cayetano Heredia (UPCH), Lima, Peru*
- Universidad Mayor de San Simón (UMSS), Cochabamba, Bolivia*
- Universidad del Salvador, Pilar-Buenos Aires, Argentina*
- Universidade de Évora (UEVORA), Evora, Portugal*
- Universidad de La Salle (UNISALLE), Bogotá, Colombia*
- Universidad de Buenos Aires (UBA), Buenos Aires, Argentina*
- Universidad Austral de Chile (UACH), Valdivia, Chile*
- Royal Veterinary College (RVC), London, United Kingdom*
- Universidad de la República (UR), Montevideo, Uruguay*
- Universidade do Estado de Santa Catarina (UDESC), Lages, Brasil
- Universidade de São Paulo (USP), São Paulo, Brasil*
- Universidad Autónoma de Baja California (UABC), Mexicali, Mexico*
- Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico°
- Universidade Federal Rural do Rio de Janeiro (UFRRJ), Rio de Janeiro, Brasil°
- The Ohio State University, Veterinary Public Health Program, Columbus, USA°#
- Universidade Nova de Lisboa, Faculdade de Ciências Médicas, Lisbon, Portugal°
- Universidade Técnica de Lisboa, Instituto Superior de Ciências Sociais e Políticas, Lisbon, Portugal°
- WHO/OIE/FAO Collaborating Centre for Training & Research in VPH, Rome, Italy°
- Food and Agriculture Organization (FAO), VPH Unit, Rome, Italy°
- European College of Veterinary Public Health (ECVPH), Wien, Austria°

- Red de Salud Publica Veterinária (REDSPVET), Bogotá, Colombia^o
- Conselho Federal de Medicina Veterinária do Brasil (CFMV), Brasília, Brasil^o
- Consejo Panamericano de Educación en las Ciencias Veterinárias (COPEVET)^o
- Sociedade Interamericana de Salud Pública Veterinaria (SISPVET)^o.

Overall activities carried out, results and projects' products: during the nearly 10 years of project activity, many actions were carried out, and despite some draw-backs, slight delays and minor logistic difficulties, the expected results have been achieved, and almost all products have been finalised or will be finalised by the end of SAPUVETNET III (May, 2012).

The main results achieved during the SAPUVETNET projects, with special reference to training modules/teaching tools, have been described by several project partners –amongst them- Ortega *et al.* (2003; 2004), De Meneghi *et al.* (2007; 2011) and Vilhena *et al.* (2011). The experiences gained, and difficulties encountered in teaching VPH topics within International groups of students/teachers-including in SAPUVET I- have been reviewed by De Rosa and de Balogh (2005).

Hereunder, some of the major activities performed are described and the most interesting results obtained, and products developed, are presented:

Harmonisation/development of a common VPH curriculum: an harmonised curriculum in VPH is justified because of the following reasons: i) existence of sanitary problems of global impact; ii) integration/unification of diagnostic methods and preventive actions between countries; iii) shared social and cultural determinants; iv) trade globalization of animals products; v) improvement of quality of education at global scale, also facilitating students exchanges and performing common researches. The main themes proposed by SAPUVETNET to be included in a common VPH curriculum are: i.) history and global context of public health; ii.) Food safety, and animal production systems; iii) International trade; iv) Preventive medicine; v.) conservation medicine and Environmental management; vi.) Animal welfare; vii.) role of veterinary medicine in disasters; viii.) zoonoses epidemiology, surveillance and control. There are four themes which are considered transversal and common in all VPH courses given at partner Universities : i. one health approach, ii. professional ethics, iii. health education, iv. social and cultural determinants. According to the proposed common VPH curriculum, the minimum professional skills to be acquired

by undergraduate students, at the end of the VPH course, should be: i. to know how to perform ante and post-mortem visits on the farm or at slaughter plants, and assess animals welfare; ii. to be familiar with (veterinary) public health and the respective national, and international legal regulations; iii. to understand and apply concepts in prevention, risk assessment and epidemiological surveillance; iv. to have acceptable level of knowledge on the principles of law applicable to national and international level; v. to understand the importance of the situation analysis of risk-based processes.

Common VPH modules, case studies and e-learning course(s): novel teaching methodologies, mainly based on problem solving approach, were used for common training program on VPH. The SAPUVETNET teaching products can be used for distance learning ; e-learning programs/platforms such as Web-CT, Moodle, Colibri have been and/or are being used to make available selected teaching modules. A module consists of a group of case studies on emergency situations related to Veterinary Public Health (VPH), and the role that veterinarians have to play in this field. Case studies are usually based on fictitious epidemiological situations to simulate real situation which veterinarians can encounter in their day-to-day professional activity. Case studies so far developed during SAPUVETNET II have been divided in three mayor VPH areas: epidemic emergencies (including zoonotic diseases by direct transmission route, or by food chain); non epidemic diseases (including the impact of natural or induced disasters on animal and human populations); public health problems linked to animal management (as antimicrobial resistance transmission); issues related to animal welfare (e.g. botulism, cisticercosis, Rift valley Fever in epidemic emergencies, aggressiveness in dogs, chemical disasters in non-epidemic situation, effects of animal hoarding, multi-resistant Salmonella or swine streptococci, zoonoses related to tourism or migration, etc.). Every “case study ” includes a teacher’s guide, a student’s guide, and the case study in MS Powerpoint® format. Some theoretical/reference documents have been also included to help with the case study solution. These documents are presentations elaborated by the network members as well as other articles related to specific topics of VPH from other organizations, that can be provided as background material for solving the presented cases. Additional case studies have been developed during SAPUVETNET III and are being made available on the project webpage through a new user area specifically designed for students and teachers, so that all users (both students and teachers) can access to the

*official project partners who participated, at least, in one phase of the SAPUVETNET projects;

^ocollaborating partners (Universities, Institutions, Organizations) during the SAPUVETNET projects;

note: although The Ohio State University is not a Latin American University, it has active teaching/research VPH programmes in Latin American countries, including several SAPUVETNET partner Universities.

relevant information (students can visualize and/or download the information dedicated to them, and teachers will have access to their relevant information after registration).

In addition to the existing VPH modules and case studies, a new e-learning course, entitled “*Boas Práticas na Produção Primária*”, has been recently proposed and it is being discussed amongst the SAPUVETNET partners. This course will focus on good practices and HACCP (Hazard Analysis and Critical Control Points) in animal production, with special reference to beef cattle, pig and poultry production; this distance-learning course will be first offered to students of the SAPUVETNET partner universities; after having positively tested its format, this e-learning course -and eventually others on different VPH topics- could also be made available to students of other faculties/universities outside the network.

Didactic videos on meat inspection: a series of videos (DVDs) on meat inspection and good practices in animal slaughter were produced during SAPUVETNET II and SAPUVETNET III; so far, 3 videos on cattle, poultry and rabbit slaughter have been published by the Audiovisual Centre, Faculty of Veterinary Medicine, UNITO. The DVDs are available in 3 languages (Spanish, English and Portuguese), with audio comments and subtitles in the language selected, plus annexes with list of abbreviations/glossary, and the relevant legislation on European food hygiene /meat inspection.

Self-learning program on meat inspection/hygiene: an interactive training program on good abattoir practices (inspection of cattle carcass) and meat hygiene was jointly developed by the Audiovisual Centres of UNITO and UNAH. The programme is provided on CD-ROM, and it is available in 4 languages. It allows students to follow the whole learning process (in 3 sessions) through an interactive interface which includes: short video clips and audio comments, on-screen options of specific “hot spots/mouse sensitive areas” linked to the session of multiple choice questions to be clicked-and-selected. The program allows to count the time elapsed and the number of correct/wrong answers and attempts to answer.

Teaching Manual on VPH: the development of the Teaching Manual of Veterinary Public Health started during SAPUVETNET II. A beta version of the manual (in Spanish language) will be soon available online on the project webpage; the Portuguese and English translation will be also included. Besides being available online, the Manual will be also distributed on CD-ROM in order to allow students in areas with poor or absent Internet connexion to use this didactic tool. The manual is based on a hypertext approach, with various links to

additional off-line learning material, and it is composed by 12 chapters, namely: History of VPH; Risk assessment; Veterinary Preventive medicine; (Theoretical) Tools for intervention in public health; Food chain safety; Zoonoses (neglected, emerging and re-emerging); Antimicrobial resistance and VPH; Climate change and its impact on (re-)emerging diseases; Biodiversity; VPH activities in Disasters; Animal welfare; Environmental impact of the livestock industry. Each chapter of the VPH manual include an introductory section, orientation questions, technical contents, evaluation questions, bibliography, additional links, and off-line learning material.

E-conferences on upcoming VPH issues: during SAPUVETNET II, an electronic conference entitled “*Local practices of animal production and health with special reference to the use of veterinary drugs and development of resistance to antimicrobials: implications for Veterinary Public Health*” was held from 28th February to 2nd March 2007. Contributions from participants were presented and discussed in a forum which was moderated by a moderating group. Over 40 professionals (vets, animal productionists, medical doctors, chemists/pharmacists), and students from different countries and continents (North-Central-South America and the Caribbean, Africa and Europe) took part in the conference, sharing their experiences, voicing their points of view, making comments and presenting talks. During SAPUVETNET III three more e-conferences were organized and held: the first was called “*Preparing the World Rabies Day*”, and was held in June 2009. SAPUVETNET III project intended to contribute to the international debate –promoted by Global Alliance for Rabies Control- on the worldwide fighting against this important neglected zoonosis, which is still a serious threat in many countries of Africa, Latin America and Asia. More than 132 participants from several European and Latin American countries, as well as from USA, attended and contributed in the e-conference. The second one was entitled “*The New Veterinary Public Health; strategies and interaction of the Animal Health and Human Medicine*”, and was held in mid-December 2009. This challenging e-conference was aimed to discuss on common research and training needs/opportunities in Public Health across medical and veterinary professions; some burning questions, e.g. how to integrate teaching common Public Health topics in both Human and Veterinary Medicine courses, were posed to participants. The third e-conference was on the “*Prudent use of antimicrobials in animals: solution or utopia?*”, in September 2010. The initiative counted with 86 participants from 14 different countries. One additional e-conference on “*Population displacement and zoonoses -Surveillance networks: how to get cross cooperation between veterinary public health*

and humans public health?" is being organized, and will be held in March, 2012. Its goal will be to discuss the migratory flows (both human and animal) and their repercussions, consequences and impact on surveillance and control of zoonoses. The importance of good communication between the different health professions will be discussed, in order to improve risk management practices regarding zoonoses and food safety. The collaboration and participation of professionals/experts from other disciplines, e.g. medical doctors, biologists, epidemiologists, social sciences experts, etc is considered fundamental for the success of the event, and for strengthening intersectoral collaboration.

The SAPUVETNET e-Newsletter(s): the objective of the SAPUVET e-Newsletter is to circulate and share the products generated by the network and by its participants, by presenting selected VPH topics and news related to the developments and achievements of the project itself. By this mean, the network aims to promote the interest and collaboration from other groups/institutions dealing with PH. Four Newsletter issues (2 per year) were published during the SAPUVET II project (2003-2005), and five new issues have been already published throughout the duration of the SAPUVETNET III project (2008-2011), and one more is expected shortly.

The SAPUVET Revista de Salud Publica Veterinaria (in Spanish): during the SAPUVETNET II project, a Journal on VPH topics was published; 2 issues were planned (1 issue per year) and were published and distributed as hard copies, as well as as .pdf (to be downloaded from the project webpage http://www.sapuvetnet.org/antigo/Eng_PUB.htm). Unfortunately, it was not possible to continue with the publication of the journal, until the start of the third phase of the project, SAPUVETNET III, whence a new version of the SAPUVET Journal was started.

The International VPH Journal "Una Salud/One Health/Uma Saúde: the Journal is an official publication of the SAPUVETNET III project. It publishes original research paper, short articles and short communications. Professionals (veterinarians and medical doctors), researchers, and students -even if not members of the project- may publish their review articles and/or research papers. The articles published by the Journal are intended to disseminate the results of research studies in various VPH fields, such as the epidemiology of transmissible diseases of major importance in Public Health, food safety, animal welfare, anti-microbial resistance, interdisciplinary working projects on "One Health", risk analysis and other themes, aimed to strength the role of Public Health. The Journal is published every six months (in July and December); contributions can

be submitted in the following languages: English, Spanish and Portuguese. The *Una Salud/One Health/Uma Saúde* journal is available as hard copy version, as well as .pdf file to be downloaded from the project website (http://www.sapuvetnet.org/EN_frameset.html).

Project co-ordinating meetings: during SAPUVET I, the first phase of the SAPUVETNET projects, four coordinating meetings were organized; the first one was held in the Netherlands (Utrecht, March 2002), and served as kick-off meeting to allow all participants to get to know each other personally, and to present their respective faculties/universities and curricula. Further meetings were held in Cuba (La Havana, February 2003), then in Italy (Turin, September 2003), and finally in Costa Rica (Heredia, February 2004). Likewise during SAPUVETNET II, there have been four coordinating meetings, two in Europe (Zaragoza, Spain, June 2005 and in Evora, Portugal, February 2007), and two in Latin America (Lima, Peru, December 2005, and in Buenos Aires, May 2006). These face-to-face meetings were very fruitful in consolidating the network and advancing on the further development of the project's activities. Also during SAPUVETNET III, coordinating meetings were also organized, the majority of them in Latin America: in Colombia (Bogotá, February 2009), in Brazil (Brasilia, October 2009), in Peru (Lima, September, 2010), in Chile (Valdivia, March, 2011); only the final project meeting was held in Europe (Rome, Italy, September 2011). During the coordinating meetings, the results achieved during the various phases of the project(s) were reviewed and jointly discussed by old and new partners. Once again these face-to-face meetings were considered very fruitful in consolidating the network and further strengthening the personal and professional relationships of participants. The coordinating meetings were most appreciated by participants as they had the opportunity to visit besides the faculty, the teaching and research facilities, the University campus of the hosting Institutions, to also gain a more in-depth view of the country visited. In fact local installations, processing plants, farms, field research stations, etc where the hosting institutions/faculties carry out their practical teaching activities were also visited. During the last project meeting at FAO, Rome, future activities to be carried out after the official end of the SAPUVETNET projects (by May 2012) were discussed and planned.

Exchanges of teachers/researchers: a total of four bilateral exchanges/visits (EU-LA, LA-EU, LA-LA) took place during SAPUVET I, i.e. from Peru to The Netherlands and Italy; from Cuba to Costa Rica; from Argentina to The Netherlands; from Italy to Cuba). During SAPUVETNET II, the bilateral visits LA-EU were from Cuba to Portugal, and from

Nicaragua to Spain; the bilateral visits LA-LA were from Bolivia to Peru and Costa Rica; and from Peru to Argentina. During SAPUVETNET III, the bilateral exchanges LA-EU were from Argentina (UBA) to Portugal (UEVORA), while the bilateral visits LA-LA were from Chile (UACH), Peru (UPCH) y Uruguay (UR) to Cuba (UNAH). The exchanges were streamlined with ongoing activities at the respective faculties, in order to make best use of the bilateral visits. The visiting partners were able to actively participate in teaching events and meet with students and other lecturers, and researchers.

Participation/contribution in National and International congresses/conferences on VPH:

teachers and researchers of the SAPUVETNET partner institutions participated in several congresses and conferences to present contributions (oral communication and/or poster presentation) on the activities of the SAPUVETNET projects, amongst which:

- Annual Scientific Conference of the European College of Veterinary Public Health (ECVPH), 25th-26th November, 2005, Glasgow, UK
- 1st Pan-American Congress on Zoonoses, 10th-12th May, 2006, La Plata, Argentina
- Annual Scientific Conference ECVPH, 7th-8th December, 2006, Lyon, France
- VI International Congress on Veterinary Sciences, 10th-13th April 2007, La Habana, Cuba
- Annual Scientific Conference ECVPH, 4 –5 December 2008, Thessaloniki, Greece
- 6th European Conference on Travel Medicine, 28th-30th April 2008, Rome, Italy
- III Congresso Nacional de Saúde Pública Veterinária, I Encontro Internacional de Saúde Pública Veterinária, Bonito, MS (Brasil) 25-28 October, 2009
- 2nd Iberian Conference on Epidemiology, 4th-5th February 2010, Barcelona, Spain
- IV Conference Cycles on Veterinary Public Health, 12th June 2010, Porto, Portugal
- III Congreso Internacional Sobre Cambio Climático y Desarrollo Sustentable, 8-11 August 2011, La Plata, Argentina
- 1st International Congress Impact of Pathogens on the human-animal's interface (ICOPHA), 15th-17th September 2011, Addis Ababa, Ethiopia.
- Annual Scientific Conference ECVPH, 5-7 October 2011, Brno, Czech Republic
- Congress of Veterinary Sciences 2011, 13th-15th October, 2011, Santarém, Portugal

For more information and details on other conferences/congresses, please visit the project webpage and read the SAPUVETNET Newsletters (http://www.sapuvetnet.org/EN_frameset.html).

Organization of specific seminars/conference on VPH issues: SAPUVETNET partners were also active in organizing/promoting various confer-

ences/seminars/workshops on up-coming VPH issues, amongst which:

- Seminar on Food safety, 4th November 2005, Polo da Mitra, Evora, Portugal
- International Symposium on “Zoonoses and Human migrations”, 16th-18th February 2007, Evora, Portugal
- III Congresso Nacional de Saúde Pública Veterinária, I Encontro Internacional de Saúde Pública Veterinária, Bonito, MS (Brasil) 25-28 October, 2009
- World Rabies day, 28th September 2010, Universidad de La Salle, Bogota, Colombia

For more information and details on conferences organized and/or promoted by SAPUVENET, please visit the project web page and read the SAPUVETNET Newsletters (http://www.sapuvetnet.org/EN_framese.html).

The SAPUVETNET student groups: in some partner Faculties/Universities, small groups of students and newly graduated vets with specific interest on VPH founded the *SAPUVET student groups*; all are working to disseminate knowledge in the field of VPH for the benefit of their own members and the local communities. So far, the following groups were started: the first one founded, *SAPUVET-Peru* in Lima; *Rede de Saúde Pública*, in Santa Catarina-Brazil; *Vector*, VPH group, Évora-Portugal, *SAPUVET-Argentina* in Buenos Aires, and also a group in Valdivia-Chile.

It is expected that the SAPUVETNET students groups will act as local catalysers of initiatives on up-coming VPH issues and will help to give continuity to project activities. Some of these students groups are already connected through a dedicated mail-list (sapuvetnet-estudantes@uevora.pt).

The SAPUVETNET project webpage: the SAPUVETNET project webpage was born during SAPUVET I, and has been expanding throughout SAPUVETNET II and III. The webpage is not only a way to communicate the project's evolution and activities, but it is also a source of teaching materials produced during the projects and made available for students and teachers, also outside the partner Universities. The webpage includes the most recent news/facts and feeds from interesting public health websites. The SAPUVETNET journal is also available for free download from the webpage. Teaching materials for download include articles and presentations from the projects partners, images related to several themes (risk analysis, food safety, animal welfare, etc.), videos (streaming), SAPUVETNET conferences abstracts, and several case studies that were produced in SAPUVET I, II and III, with a guide to the teacher and student. Information about all three projects can be seen. On the project website, reference is also made to some of the scientific and popular articles on VPH issues, and related

to project activities, published by project SAPUVETNET partners. The building up of the project webpage is an on-going process, so more sections are being added, and the contents (e.g. teaching material, etc.) are continuously updated.

CONCLUSIONS

The SAPUVETNET project, since its start in 2002, has shown a significant evolution and consolidation, as demonstrated by the integration of many education/research institutions, as well as International organizations, all sharing the theoretical framework and philosophy of SAPUVETNET. This process underlines a full understanding of the project goals and a shared need within the professional and scientific communities (both public health and veterinary public health) to work jointly within the concept of "One Health". SAPUVETNET partners have the consciousness that their contribution it is just a small piece of the great puzzle that is the public health; all SAPUVETNET products are a contribution to this common goal. Didactic tools produced by the SAPUVETNET projects have been and/or are being tested and used by partner faculties and other teaching Institutions/Organization for under and post-graduate courses. Teaching material can be freely circulated and distributed according to Creative Common policy (<http://creativecommons.org/>). Didactic tools can be also used for distance learning and can be modified/adapted to the local context of any country/geographical area, even outside Latin-America and Europe. A new version of the DVDs and CD-ROM on good abattoir practices and meat inspection is being prepared with the collaboration of FAO, VPH Unit, to include a French version (and eventually some major African languages) for distribution and circulation in most of the African continent. This will allow to make these teaching products by SAPUVETNET distributed and available also outside Latin America and Europe, giving an added value to the project. Teaching material produced by SAPUVETNET are available at the project webpage (<http://www.sapuvetnet.org>; under continuous updating) or can be obtained from the project coordinator(s) and/or the contact persons at the partner Faculties/Universities. All partners and collaborators of the SAPUVETNET project highly welcome any contribution from the scientific community, students and stakeholders towards a *Better Health* for all.

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