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**First Regional Field Epidemiology Training Programme for Veterinarians  
(FETPV) for SAARC countries**

**26 November -14 December 2012  
Kathmandu, Nepal**



## **1. Introduction**

Some shortcomings in the ability to rapidly detect, report and respond to Highly Pathogenic Emerging (and re-emerging) Diseases (HPEDs) in the South Asian Association for Regional Cooperation (SAARC) region have been demonstrated as a challenge over the years. Failure to detect disease pathogens is directly related to weak field epidemiology and laboratory diagnostic capacity. Early detection of animal diseases very much depends on the availability and capacity of veterinary field epidemiologists to conduct proper outbreak investigations, assess, analyze and report the findings effectively and rapidly. The Field Epidemiology Training Program (FETP), a network of in-service Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) is a globally recognized long-term field epidemiology program for the public health sector. This two-year training course provides training to support outbreak investigations, analysis of surveillance data, field research and provision of practical recommendations for decision makers. This FETP model promotes the concept of “training through service”. Based on its success in public health, the model was adopted for veterinarians through a joint activity of Department of Livestock Development, Thailand (DLD) and Food and Agriculture Organization (FAO) of United Nations Emergency Centre for Transboundary Animal Disease (ECTAD) based in Bangkok, Thailand. A project with support from United States Agency for International Development (USAID) and European Union (EU) initiated the two-year “Field Epidemiology Training Program for Veterinarians, FETPV” course in 2008 for Asia and the Pacific. A short-term (one month) pre-requisite regional field epidemiology training course for veterinarians, called ‘Veterinary Field Epidemiology in Action’ (FVEA) was also initiated by the same organizers.

The Consultative Meeting of Epidemiology Consortium for Emerging Infectious Diseases and Transboundary Animal Diseases held in Bangkok in 2011 recommended the utilization of existing capacity building mechanisms in veterinary epidemiology that has been developed through programs such as FETPV, the Applied Veterinary Epidemiology Training (AVET) and other similar initiatives.

SAARC and the Food and Agricultural Organization of the United Nations (FAO) jointly established the Regional Epidemiology Centre (REC) and the Regional Support Unit (RSU) in Kathmandu, Nepal, with financial support from the European Commission (EC) with an overall objective of strengthening and empowering SAARC in its ability to prevent, control and or eradicate highly pathogenic and emerging diseases (HPED) including transboundary animal diseases, through improved veterinary and public health services and interdisciplinary and inter-sectoral collaboration on a regional basis. The RSU comprises a Regional Epidemiology Centre (REC) and a laboratory coordination mechanism to coordinate and support the networking of the national epidemiology units and laboratories in the region for strengthening early warning systems and achieving more effective and rapid response to control HPEDs. Facilitating effective and efficient regional disease prevention

and control programmes through capacity building of field veterinarians is of prime importance.

To build the epidemiology capacities of the field veterinarians from the region a similar short course was felt needed to be organized for the participants from the member states. Therefore, REC/RSU (for SAARC countries) embarked on developing and conducting the first SAARC Regional Field Epidemiology Training Programme for Veterinarians' for the Members States with funding support from EC through OSRO/RAS/901/EC project "Regional cooperation programme on highly pathogenic and emerging diseases (HPED) in South Asia (SAARC component)".

Taking a One Health approach the training was conducted with participation of the faculty from the Patan Academy of Health Sciences, Patan, Lalitpur, Nepal and also involving some wildlife experts from India and Nepal. To add value to the course and ownership of the course by the host country it was jointly organized with the Department of Livestock Services, Ministry of Agriculture Development, Nepal who provided technical staff and logistic arrangement support mainly for the field outbreak investigation works.

## **2. Objectives**

The purpose of FETPV was to provide government field veterinarians to conduct effective and timely outbreak investigation and response and also surveillance of existing and emerging infectious diseases. The specific learning objectives of the training programme were to provide the participants with basic field epidemiological competencies and skills:

- Explain animal-human-ecosystem interaction affecting disease occurrence;
- Explain and apply concepts of epidemiology for disease prevention and control;
- Design and conduct disease surveys and surveillance utilizing multi-level and multi-disciplinary networks;
- Plan and conduct effective outbreak investigations under a variety of field situations;
- Apply principles and practices of data presentation and report writing.

## **3. Expected output**

The goal of FETPV was to provide basic knowledge in field epidemiological applications focusing on effective animal disease surveillance and outbreak response through integrated inter-sectoral and inter-disciplinary approaches in order to improve effectiveness and timeliness of disease detection and response at national and international levels, including transboundary aspects. The trainees were also expected to conduct proper epidemiological surveillance and outbreak investigations in their respective countries leading to producing useful disease information and technical reports and publications.

## **4. Eligibility criteria and selection of trainees**

The FETPV trainees were drawn from a list of field veterinarians nominated by SAARC member countries and selected by a selection committee at REC/RSU. The nominated trainees also submitted a filled ‘course application form’ which included their curriculum vitae (CV) and other details. Initially, the plan was to select three participants from each country out of the five nominations submitted. However, since some countries could not field any or only few candidates the selection committee decided to accommodate almost all the eligible candidates fielded by the countries. Nepal, being the host country, two additional seats were offered to the country. In total four candidates had to be disqualified because they were either non veterinarian, overage or over qualified. In total, 19 candidates enrolled for the course (one selected candidate could not participate because of some last moment domestic problem). The median age of the trainees was 35 years with a range from 27 to 52 years.

The criteria imposed for the selection of the trainees were;

- Hold at least a Bachelor Degree in Veterinary Medicine or equivalence
- Have at least two years working experience in epidemiology or related fields
- Age between 25 – 45 years
- Recommendation from his/her superior at the national government
- Proof of adequate proficiency in English
- Adequate competency in computer skills such as MS Excel, MS Word, MS PowerPoint, other software

However, the maximum age restriction had to be relaxed because of the fear of eliminating participation from some countries.

**Table 1: Detail information of the participants (median age, placement and job responsibilities)**

Sl.no.	Country	Name	Qualification	Current job responsibility	Place of work	Any past epidemiology training?
1	Bhutan	Dr Karma Wangdi	BVS&AH	Look after the overall animal Health activities in the region; collection of data on vaccination, submission of sample to labs for investigation; Sero-surveillance on various diseases; screening	Regional Livestock office East Central Region	No
2	Bhutan	Dr Nirmal Kumar Thapa	BVSc and AH, MVSc (pathology)	Plan and conduct Disease investigations in the field with regional and district level animal health and also Ministry of health officials	National Centre for Animal Health, HQ, Thimphu	No
3	Bhutan	Dr Bal Bahadur Bhandari	BVS&AH	Clinical disease investigation and Dx; Disease surveillance; animal health management; incident commander of HPAI emergency	Satellite Vet lab, Sarpang District	No
4	Bhutan	Dr Tshering Dorjee	DVM, MSc (communication innovation)	Look after overall livestock development in the region; Disease control & prevention; livestock research.	Regional Livestock office Eastern region	No
5	India	Shubhangi Sanjay Gavkare	BVSc & AH,	Surveillance, epidemiology analysis	State HQ, Pune	No
6	Nepal	Dr Bidur Prasad Gautam	BVSc & AH,	Treatment, preparation of report, surveillance, preparation of control plan, PPR control, disease reporting	District Livestock office, Dhankuta	No

7	Nepal	Dr Vijaya Kumar Shrestha	BVSc & AH, MSc (Animal Sc)	Diagnosis of livestock and poultry diseases, surveillance, investigate outbreaks, compilation and analysis and disseminate data/info, assist formulate contingency plan	Regional Veterinary Laboratory, Janakpur, Dhanusha	No
8	Nepal	Dr Bhakta Niure	BVSc & AH	Treatment of animals, prepare & implement surveillance program for priority diseases, compilation and analysis of data related to animal disease at district levels; Conduct risk analysis on demand.	District Livestock Office, Rupendi	No
9	Nepal	Dr Rishi Ram Sapkota	BVSc & AH	Monitor health status of animals, trace out the disease prevalence on temporal and spatial variation basis, collection of data and analysis, training	District Livestock Office, Dang	No
10	Nepal	Dr Hem Raj Awasti	BVSc & AH	Clinical Services; outbreak investigation & control; prepare disease control strategies; Assist national disease control program, M& E livestock program; Publish quarterly annual DLISO	District Livestock Office, Doti	No
11	Nepal	Dr Tulsi Ram Gumpo	BVSc & AH	Quarantine inspection, Import risk analysis, surveillance	Animal quarantine Office, HQ Kathmandu	No
12	Nepal	Dr Manish Man Shrestha	BVSc & AH	Investigation of Rabies. Compilation, analysis and dissemination of info. mapping of rabies distribution. Assist f disease surveillance at district level.	Rabies Vaccine Production Lab, Tripureshwor, Kathmandu	No
13	Pakistan	Dr Abdul Rehman Naveed	DVM	Data collection, compilation, reporting, designing media campaign for masses	Livestock Development, Balochistan (Provincial)	No
14	Pakistan	Dr Abdul Rashid Bhutto	DVM	Poultry surveillance, sample collection for serology, Laboratory bacteriology	PRI Korangi, Karachi (Provincial)	No
15	Pakistan	Dr Abdul Ahad Soomro	DVM	Surveillance of Brucella in sheep and goat, collection of samples for zoonoses	Central Vet diagnostic Lab, Sindh (Provincial)	No
16	Sri Lanka	Dr SMTS Manchanayake	BVSc	Research related to Pathology; development of Dx keys to control diseases; Field disease investigation	Veterinary Research Institute, Peradeniya, HQ	Descriptive and analytic studies -60 hours (2002-03)
17	Sri Lanka	Dr Nilukshi Liyanagunawardena	BVSc, MSc (Dairy, & meat product technology)	Formulating research, lab diagnosis, surveillance and control of important bacterial disease in livestock, research in salmonella, screening, outbreak investigation	Veterinary Research Institute, Peradeniya, HQ	Certificate course in 'Applied Epidemiology' in PG Institute of Science, Univ. of Peradeniya in 2011
18	Sri Lanka	Dr WMP Bandara	BVSc	Disease investigation and surveillance of important diseases of poultry	Veterinary Research Institute, Peradeniya, HQ	Certificate course in 'Applied Epidemiology' in PG Institute of Science, Univ. of Peradeniya in 2011
19	Sri Lanka	Dr TCK Wimalaratne	BVSc, MSc (Devpt Communication & Extension)	Team leader District Emergency for actions surveillance and investigation, reports, distribution of vaccines.	District office, Polonnaruwa	No

**Median age: 35; Age Range: 27-52**

Though nominations were fielded from both Afghanistan and Bangladesh none could attend at the end because of their internal administrative issues regarding clearances and passport issuance.

## **5. Training format**

The course supported the following approach to learning:

- Necessary theoretical knowledge and concepts using problem-oriented approach that stresses critical reasoning
- Practice exercises to reinforce knowledge, concepts and critical reasoning
- Apply knowledge in actual field case studies, outbreak investigation or surveillance
- The lecture classes and exercises were conducted in a hotel and the outbreak investigation was taken to a real field outbreak in few Village Development Committees (VDCs) of Lalitpur District where an outbreak of FMD was occurring.

## **6. Course organizers**

The training was organized by the REC/RSU for SAARC countries, Food and Agriculture Organization of the United Nations based in Kathmandu, Nepal in collaboration with the Department of Livestock Services, Ministry of Agriculture Development, Nepal through the Directorate of Animal Health (DoAH) by providing technical staff and logistics support particularly for conducting the FMD outbreak investigation.

## **7. Instructors and mentors**

As the course was organized for the first time by REC/RSU in the region a number of resource persons (instructors/mentors) were invited from FAO RAP, FAO India and also one from Colorado State University, USA all of whom had experience in conducting such training in the past in Southeast Asia or in India. The technical team from REC and RSU co shared the delivery of the courses apart from coordinating the whole training programme. Considering One Health approach concept, public health lecturers/mentors from Patan Academy of Health Sciences (PAHS) were engaged in delivering lectures and exercises on medical epidemiology and also a wildlife expert from Kerala, India and a zoo veterinarian from Nepal were involved in delivering the courses in wild life aspects. Developing a contract agreement (LOA) with PAHS was to forge a longer collaboration in conducting future similar courses as the institution is applauded to be one of the best public health teaching institutes in the valley.

## **8. Organization of the course**

The main objective being to build capacity of field veterinarians of SAARC countries in epidemiological concepts and applications, it was expected that the trainees will initiate the thought-process, understand disease in epidemiological perspective at population level, understand the importance of preventative approach to control disease, implement epidemiology in their daily practice, plan disease investigations, and structure surveys and surveillance programs in their region. The trainees were also helped to finalize the designing of their survey plans for a specific disease to be implemented in their country after

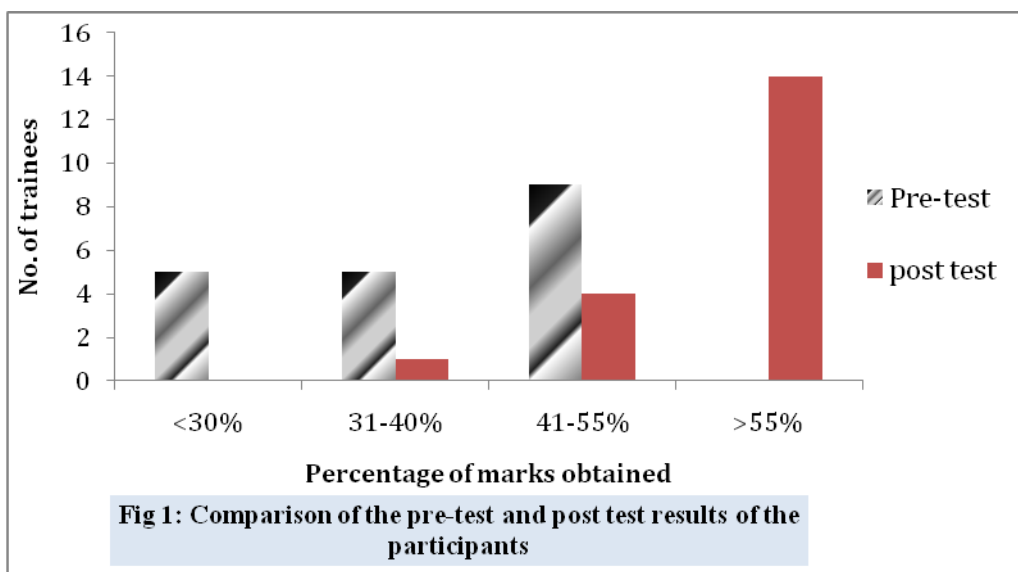
participants complete the course and reach back to their respective countries duty stations. A series of lectures followed by practical exercises from both veterinary and public health aspects were delivered. To gain an experience of a an actual disease outbreak investigation, collect data and information, compile the data using Microsoft Excel software and perform analysis, a real outbreak of FMD in Lalitpur district was investigated and analysis performed on the data gathered from the investigation. A report was prepared on the outbreak investigation and presented to the officials from the Department of Livestock Services and the guests during the closing session of the course. Trainees also developed some surveillance plans on a chosen disease and study type by each of the country groups, the draft of which was to be finalized after incorporating the needed data when they reached back to their work stations. The survey plans, if the participant(s) and the host government want to implement, REC/RSU along with the facilitators/mentors are expected to provide mentorship.

## 9. Evaluation of the course

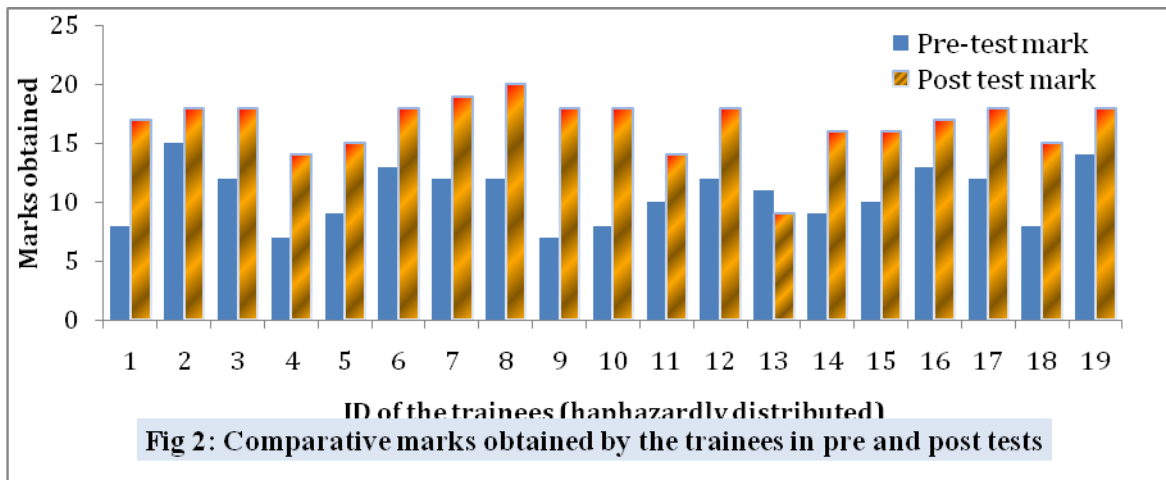
To access the effectiveness of the delivery of the course two methods of evaluations were undertaken. A written pretest and a post test assessment using a set of questions were carried at the beginning and at the end of the course respectively. Another modality adopted was to assess the sessions after the delivery of each session and an overall course assessment on the final day of the course. The following were the results from these two assessments.

### a. Pre and post test assessment

A set of 27 closed type questions were prepared on some basic principles and concepts of epidemiology. The pretest was conducted on the first day of the course before the beginning of the technical sessions. The same set of questions was used for the post test evaluation on the final day and the results compared (Fig 1 and 2).



In the pre-test no trainees got over 55% marks and five of them received less than 30% marks only. During the post test evaluation more than 14 (74%) trainees got more than 55% marks.



Except for one individual who received less marks than in the pre-test all others showed marked improvement in their performance in the written test by atleast 15%.

### **b. Session and course evaluation findings**

The purpose of this assessment was to get some feedback and practicable suggestions from the trainees so as to improve similar events to be organized in the future by addressing the weaknesses and building upon the strengths. The assessments included some closed and open ended questionnaires.

#### **i. Methodology**

The assessment process of the training course comprised of two parts namely i) session assessment and ii) overall course assessment.

At the end of each session, trainees were asked to evaluate the sessions in terms of its strengths and weaknesses along the lines of contents, breadth and synthesis, learning material and use of technologies and performance of presenters. The trainees were also asked to offer their suggestions to improve the session. A questionnaire (Annex-) comprising of six open ended questions was prepared and distributed among the trainees. All the trainees were asked to fill in the questionnaire but the names were to remain anonymous.

On the last day of the course, the trainees were asked to provide their feed back by filling in a questionnaire for the overall conduct of the course. The questionnaire comprised of two parts; Part A consisting of 20 closed questions while Part B contained six open ended questions. The questions were related to five major components: trainees, logistics, performance of resource persons, course contents, field work and output. Part A questions were to be evaluated by marking the ordinal scale as 0 = not observed, 1= poor, 2 = fair, 3= good, and 4= very good, 5= excellent. Open ended questions in Part B of the questionnaire were related to strengths, weaknesses, overall performance of presenters and suggestion for improvement.

#### **ii. Findings of the assessments**

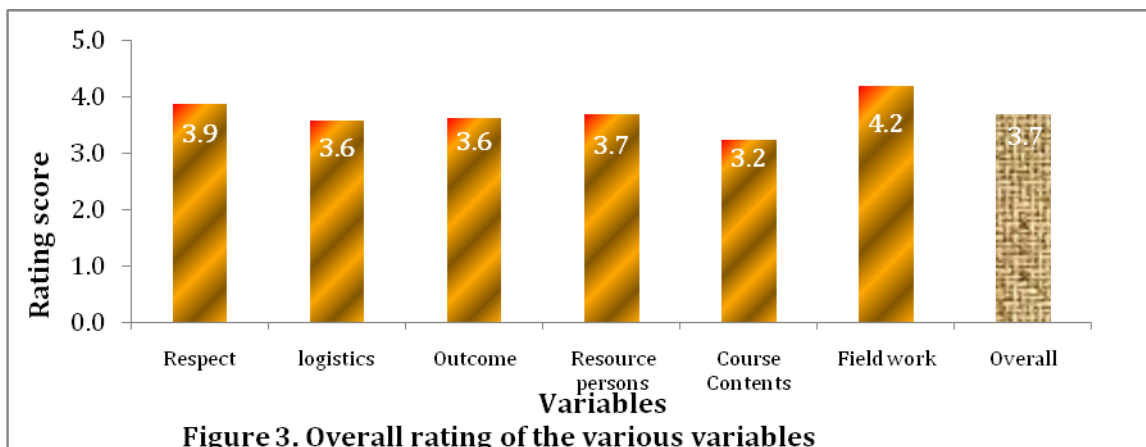


Between 77- 89% of the trainees indicated that the sessions were effective, 33-69% of the trainees stating that the contents were sufficient with adequate depth and breadth and synthesis of ideas. Between 55-85% of the trainees indicated that the performance of resource persons ranged from good to very good with an average rating of 3.7. The trainees very much appreciated how well the instructors were prepared and especially Drs David and Sangeeta. The weakness of the instructors identified were that some lectures were either one way communication or was rushed through, some lecturers needed improvement (no practical application), sessions were overlapping sometimes, some presentations were too long, and sometimes confusion among the mentors were also observed.

The field outbreak investigation was considered as above “very good” (rating 4.2) for they gained real experience from the exercise. However, the general feeling was that the duration was little short.

The overall performance of training course was rated between “good” and “very good” with an overall rating of 3.7 as determined through the closed questions. The different variables rated and the ratings achieved are shown in figure 3.

**Figure 3. Overall rating of the various variables from the assessment**



The main **strengths** highlighted were on training facilities provided, organizational management and logistics provided, real experience gained from the field outbreak investigation, the good delivery of the lectures and exercises over all, active participation from the trainees and all round support provided by the instructors/mentors. Many felt that this course was “one of very practical and useful training ever attended” and also indicated that this training has generated interest among trainees belonging to different countries to working together and sharing experiences.

However, the **weaknesses** pointed out were that the duration was too short (80%), the course was too intensive, some sessions were too long, local trainees were disadvantaged as they were not allowed accommodation in the hotel and had to travel long distance every day, lack

of outdoor entertainment, too many instructors intervening in between sessions confusing trainees sometimes, time was too short for practicing sample size calculations, questionnaire designing, use of Excel and software, data presentation and report writing.

### **iii. Suggestions proposed by the trainees for future training**

The following were some suggestions by the trainees to be considered for future training programmes; i) the duration needs to be increased to atleast 30 days (80% trainees), ii) more time to be given to the trainees to absorb the concepts taught, iii) all the trainees including the local trainees should be allowed to stay in the hotel (residential) so that homework could be done together in the evenings and staff need not travel every day some from long distances, iv) there should be some 4 to 5 minutes breaks in between sessions and more ‘ice breakers as well in between sessions, v) more participatory platform to be provided for the trainees so that two way discussions are encouraged , vi) sessions may not to extend beyond 5 pm , vii) lecture duration to be reduced and no lectures may be kept in the afternoon. Follow up of the programme was suggested as one arrangement the organizers should keep in mind to see that the techniques and skills learnt here is practiced in the field/work place.

## **10. Recommendations**

The ‘Regional FETPV training for SAARC countries’ being the first of its kind organized by the REC/RSU team a number of external instructors/mentors for the course had to be engaged. With experience gained from this collaborative activity the HPEDs project should be able to conduct similar training with minimal external faculty support in the future. The training course was also much appreciated by the external instructors/mentors who had the experience of participating in similar training in Bangkok and India. The feedback provided by the trainees through the assessment exercise was also indicative of the usefulness of engaging appropriate resource persons for value addition to the training course. Following recommendations were suggested by the faculty members and also as gathered from the feedback from the trainees.

- The selection criteria and target participants being adopted should be strictly enforced to optimally utilize the resources and the effort leading to achieving the expected output and subsequent outcome. Perhaps the maximum age should be reduced to 40 years (as FETPV being an applied/specialized training, age plays an important role in candidates’ commitment and enthusiasm).
- The training course should be organized as residential programme so that the local participants are made to stay in the same hotel as other participants. This is because many staff complained of having to travel long distances every day and they were also not able to do their homework together which they were assigned to do.
- The lectures and exercises delivered by the public health personnel from Patan Academy of Health Sciences (human health epidemiology component) required some alignment and more focus for the targeted trainees. If necessary we might have to

source another institution/organization to provide the support, such as WHO SEARO, New Delhi.

- Considering the course content and the requests for providing more hands on exercises by the trainees, the duration of the course was felt to be short both by the instructors and the trainees. The duration needs to be increased to atleast 4 weeks. Alternatively, it could be made as a 20 working day programme including Sundays as working days.
- More dedicated time for the following sessions/topics were suggested;
  - Demonstrations and exercises on the use of computer based software tools for sample size calculation and calculating rates and ratios
  - Data entry, coding, cleaning and data analysis by engaging the trainees to perform all these processes by themselves so that the quintessential learning objectives are met
  - The questionnaire designing session, survey design and random sampling exercises
  - The field outbreak investigation including data presentation and report writing
- Group exercises on developing disease survey plans or any other epidemiology related activity to be implemented by the trainees after they return home with the mentorship support from the project/instructors be continued and strengthened. If possible, support in funding two or three best proposals will prove to be very useful to assure successful application of the training in the field and assure impact of the training.
- A full session on bio-security including practical sessions needs to be incorporated in the curriculum as this area seems to very much neglected/ignored by the field veterinarians.
- Delivery of lectures and exercises could be improved focusing more on imparting essential knowledge and skills to the trainees on the identified subject rather than mesmerizing or demonstrating what one knows which were sometimes pointed out to be not focusing on the expected learning objective besides loosing valuable time. The instructors/mentors should prepare their lessons based on the specific learning objectives and learning outcomes of each session. Preparing lesson plans based on a standard format would help achieve that.
- EMPRES*i* disease information system developed and maintained by FAO HQ could be used as a regional platform in the future. EMPRES*i* system, which, apart from being a source of information on diseases from all over the world can also be used to access data (if given access) by the end users to perform their own epidemiological analysis. Besides, the FETPV trainees will be a group most potential for reporting outbreaks to the system which will go a long way in improving the quality and utility of the system. Therefore, providing a half to one day training on the use of EMPRES*i* needs to be included in the curriculum to add value to the training programme.
- Inclusion of a lecture and exercise on ‘participatory epidemiology’ may be also included which could help in both surveillance and outbreak investigations in the communities.

**Tentative schedule**

**Regional ‘Field Epidemiology Training Programme for Veterinarians’ for the SAARC countries: A three weeks course on field epidemiology concepts and application for field veterinarians**

Organized by Regional Support Unit, FAO, Kathmandu in collaboration with the Department of Livestock Services, Nepal

Venue: Kathmandu

Day/Date	08:45-09:15	09:15-10:45	11:15-12:45	13:45-15:15	15:45 – 17:00
<b>Session 1: Basic epidemiological concepts</b>					
Monday 26 November	<b>8:00-9:00</b> Registration - Opening ceremony	- Introduction - Objectives and expectations - Pre-test <b>(MO/DC/PT)</b>	Understanding of animal-human-ecosystem interface (One Health) <b>(DC/WHO/MD/AK/JT)</b>	Basic epidemiology concepts and essential definitions <b>(DC/PT/MD)</b>	<b>EXERCISE</b> Application of concepts and definitions of epidemiology <b>(DC/MD/PT/MA/KT)</b>
Tuesday 27 November	Recap	Basic measures and tools of descriptive epidemiology: Data counts, rate, ratio, proportions <b>(Patan Academy)</b>	<b>EXERCISE</b> Basic measures and tools of descriptive epidemiology <b>(Patan Academy)</b>	Basic measures and tools of descriptive epidemiology: incidence and prevalence <b>(DC/SR/MD)</b>	<b>EXERCISE</b> Basic measures and tools of descriptive epidemiology <b>(DC/ SR /MD/KSB)</b>
Wednesday 28 November	Recap	Epidemiology study design <b>(SR/MD/MA)</b>	<b>EXERCISE</b> Examples of study design <b>(SR/MD/MA)</b>	<b>EXERCISE (workshop)</b> Application of epidemiology to government services <b>(MD/AK/RD/KT/MA/KSB)</b>	
<b>Session 2: Assess animal and/or human health situation (Survey and Surveillance Design)</b>					
Thursday 29 November	Recap	Surveillance and Monitoring Systems in Human Health	Surveillance and Monitoring Systems in Animal Health <b>(MD/DC/MA)</b>	<b>LECTURE &amp; EXERCISE</b> Sampling Methods	<b>EXERISE</b> Basic sample size calculations

		(Patan Academy)		(MD/SR/ DC/MA)	(DC/MA/AK/PT/KT/SR)
<b>Day/Date</b>	<b>08:45-09:15</b>	<b>09:15-10:45</b>	<b>11:15-12:45</b>	<b>13:45-15:15</b>	<b>15:45-17:00</b>
Friday 30 November	Recap	LECTURE & EXERCISE Survey Planning (DC/SR/ PT/MA/KSB/KT/AG)		Wildlife disease surveys and surveillance (AG/JT)	Problem based learning in wildlife exercise at human-animal-wildlife interface (AG/JT)
Saturday and Sunday -1 & 2December – Holiday					
<b>Session 3: The epidemiological response to disease outbreaks</b>					
Monday 3 December	Recap	Human disease outbreak investigation (Patan Academy)	Animal disease outbreak investigation (DC/KSB/SR)	THEORY/EXERCISE Questionnaire design and delivery: developing of a questionnaire for FMD outbreak investigation (SR/DC/KSB/MA/PT)	
Tuesday 4 December	Recap	EXERCISE Apply basic descriptive statistics to accurately describe a disease event, generating hypotheses, data collection, processing, analysis and interpretation (SR/DC/Patan/KSB/MA/PT)		Approaches to laboratory sample collection, despatch and testing (MSR/VJ)	Communication skills for field epidemiologists (PN/MA)
Wednesday 5 December	Recap	Data presentation and report writing (SR/PT/Patan)	Introduction to spatial data analysis (RD/SR)	EXERCISE Data presentation and report writing. Using Excel to present and analyze data. (SR/PT/RD/Patan Academy)	
<b>Session 4: Field week on conducting a disease outbreak investigation (DC/SR/MSR/PT/KSB/MA/KT/VJ+ Nepal Massey graduates &amp; district vets).</b>					
Thursday 6 December	Recap	Questionnaire Beta testing (DC/KSB/PT/MA)	Planning for outbreak investigation: FMD background, case definition and setting of the objectives (DC/SR/PT/KSB)	Preparation for the disease investigation (PPE, sampling materials, questionnaires, team formation, arrangement for transport and lunch, etc) <b>KSB/KT/VJ/PT/SCB)</b>	

Time: 26 November to 14 December 2012

Day/Date	08:00-10:45	11:15-12:45	13:45-15:15	15:45-17:00
Friday 7 December	Conduct disease outbreak investigation in the field (all mentors)			Data input into the excel sheets and analysis (SR/MA/RD)
Saturday - 8 December - Holiday				
Sunday 9 December	Conduct disease outbreak investigation in the field			
Monday 10 December	Conduct disease outbreak investigation in the field			Data input into the excel sheets and analysis (SR/MA/RD)
Tuesday 11 December	Follow-up data collection if required or data input into excel sheets		Data input into the excel sheets and analysis (SR/MA/RD)	
Wednesday 12 December	Data analysis and report writing (SR/DC/PT/MA/RD)		Report preparation and power point presentation on findings and recommendation to District Livestock Services Office	
<b>Session 5: Reporting and closing</b>				
Thursday 13 December	Finalization of report		Preparation of PowerPoint presentations (Submission of the draft survey plan -PT/MA/KSB coordinate)	
Friday 14 December	Presentations and discussion		- Post test and compare results - Course evaluation - Discussion (MO/DC/PT/MA)	-Post training way forward - Closing session (MO/DC/PT)

### Facilitators/Mentors

\*--Overall Course Facilitator/Coordinator: **PT/MA/KSB**

\*--Course evaluation: **MA/ KSB/ PT**

\*-- Compilation of course notes and resource materials: **SR/PT/RD**

\* -- Laboratory sampling materials and PPE arrangement – **KSB/VJ/BBC**

\* --Accommodation, food, other logistics and teaching material arrangement - **Simon Boas & Rabin Karmacharya**

\* -- Proceedings of the training programme – **PN/MA**

<b>External</b>	<b>Internal</b>	<b>Local (Nepal)</b>
David Castellan ( <b>DC</b> ) Madhur Dhingra ( <b>MD</b> ) Sangeeta Rao – ( <b>SR</b> ) Acty Geroge ( <b>AG</b> ) Kedar Baral - Patan Academy of Health Sciences ( <b>PAHS</b> )	Mohinder Oberoi ( <b>MO</b> ) Pasang Tshering ( <b>PT</b> ) Muhammad Akram ( <b>MA</b> ) Khadak Singh Bisht ( <b>KSB</b> ) Mandava Subbarao ( <b>MSR</b> ) Ravi Dissanayake ( <b>RD</b> ) Prakash Nayak ( <b>PN</b> ) Abul Kalam ( <b>AK</b> ) Simon Charles Boas (SCB) Rabin Karmacharya (RK)	Kishan Chand Thakuri ( <b>KT</b> ) Bal Bahadur Chand ( <b>BBC</b> ) Vijay Chand Jha ( <b>VJ</b> ) Jeevan Thapa ( <b>JT</b> )  Massey graduates for field work ( <b>Devkota, Milan, Pragya</b> )