# Regional Coordination of Foot and Mouth Disease Surveillance, Diagnosis and Control in the Near East and North Africa

# **Workshop Report**



4-5 December 2012 Cairo, Egypt

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### 1. BACKGROUND AND CONTEXT

The livestock sector contributes up to 60% of agricultural GDP in the Near East and North Africa (NENA) region. The region has recently experienced four outbreaks of an atypical strain of FMD called SAT2, with cases confirmed in Egypt and Libya in February, and in the Gaza Strip and Bahrain in April 2012. Due to the novelty of this particular strain of FMD, which is normally limited to sub-Saharan Africa, livestock in the region have no acquired resistance to it. In the affected countries, majority of livestock is raised on small farms. Many households have lost their only assets; meat and milk value chains have been affected negatively.

FAO estimates that more than 250 million animals are at risk in the region. Since February, the new strain of FMD, in Egypt alone, has infected more than 80,000 cattle and buffaloes, killing over 20,000 of them, mostly the young ones. The impacts of FMD outbreaks on livestock production and the livelihoods of smallholders: remarkable disorder in the meat supply chains, volatility of meat prices, and reduction in milk yield of the affected animals by as much as 80%. The disease is not a direct threat to humans; however, meat and milk from sick animals are unsafe for consumption, raising concerns about food shortages. For example, according to the Ministry of Agriculture and Land Reclamation of Egypt, by August 2012, some 94,401 animals have been infected by FMD with mortality rate reaching 28 percent, a loss of US\$ 33 million. Steadily rising prices for meat and fish was noted. Demand for camel meat was seen to increase in the region as the disease swept through.

FAO has been working to ensure that countries are prepared to prevent the disease from entering, to recognize and report the diseases, and to use the appropriate vaccine to protect their herds and flocks. This was done through fielding a number of missions to Egypt, Libya and PAT-Gaza the aims of which are to train technical staff in laboratory diagnosis, surveillance and vaccine programme evaluation, and data collection. FAO has also contributed to the reinforcement of the prevention and control capacities (SAT2 diagnostic lab training session in particular) more widely in the region (Algeria, Lebanon, Morocco, Mauritania, and Tunisia). FAO issued flush appeals for concerted efforts to contain the outbreaks and also sent alerts to member countries for preparedness to avert the epidemic. In 2-3 May 2012 FAO in collaboration with the Alexandria University and General Organization for Veterinary Services of Egypt has organized a "Technical workshop on FMD control in Egypt: challenges and way forward" and was attended by about 100 participants.

Member countries attending the 31<sup>st</sup> Regional Conference for the Near East held in Rome from 14-18 May 2012, requested FAO and OIE to support them in their effort to control transboundary animal diseases, especially diseases such as FMD and PPR. This is because countries in the region are unable to control these diseases due to their transboundary nature. FAO has been assisting Morocco, Algeria and Tunisia to attain PCP-stage 3. These countries have applied their status for recognition by OIE. In April 2012, FAO approved small fund through its Technical Cooperation Project for "Regional Coordination of FMD control". This allowed the participation of at least CVOs of eight countries at the FAO/OIE Global Conference on FMD Control organized in Bangkok from 27-29 June 2012. Shared between FAO and OIE, about 13 countries were present from the region at the Global conference.

FAO underscores the need for regional collaboration, timely information sharing and harmonization of strategies as its prime role. To better harmonize FMD control strategies among member countries of the region, from its TCP, FAO has organized this workshop on "Regional Coordination of FMD Surveillance, Diagnosis and Control in the Near East and North Africa" held in Cairo Marriott Hotel from 4-5 December 2012.

## 2. WORKSHOP OBJECTIVES

- 1. To assess FMD status of across NENA
- 2. To present country PCP self-assessment and establishing/updating roadmap(s) for the region

- 3. To review draft regional strategy for FMD control by the member countries
- 4. To present approaches in the development of regional contingency plan and methodologies of conducting socioeconomic impact analysis
- 5. To identify priorities and actions for regional support

The regional workshop brought together 23 experts including, Chief Veterinary Officers (CVOs), Epidemiologists, Veterinarians, Lab specialists from 9 countries, FAO experts (FAO/AGAH, EuFMD, Regional and Sub-regional Offices), and a resource person from the Faculty of Veterinary Medicine of Jordan University of Science and Technology.

The first day was dedicated to improving understanding of Global Strategy for FMD control, training on PCP and countries self-assessments. During the second day the workshop focused on reviewing of draft regional FMD control strategy, PCP assessment and road-map including thematic working group discussions on: 1) epidemiosurveillance; 2) diagnostic capacities and vaccines; and 3) Regional coordination, country projects and funding mechanisms. The agenda can be found in the Annex 1.

# 3. SUMMARY OF PRESENTATIONS

Opening address was made by Mr. Abdessalam OuldAhmed, FAO Regional Representative for the Near East (FAO-RNE). In his speech, Mr Ould Ahmed highlighted the importance of FMD control in protecting assets of the poor and improving food security and poverty alleviation in the region. He continued his speech... "Due to the endemicity of FMD in most of the countries of the region and its transboundary nature that cannot be controlled alone, regional coordination of FMD control is timely and necessary. Member countries of the region at their 31st Near East Regional Conference held from 14-18 May 2012 in Rome, have specifically requested FAO and OIE to support countries in their efforts to control FMD and other transboundary animal diseases. We strive for more collaboration among all stakeholders and players to provide the best service possible to countries. FAO assisted a number of countries and territories of the region (Algeria, Egypt, Libya, WB & Gaza strip, Lebanon, Morocco, Mauritania, and Tunisia) in their efforts to control the recent outbreaks, provided trainings to others and helped in their pursuit in progressive control pathway (PCP) for FMD control. Through its technical cooperation programme (TCP), FAO supported the participation of 8 member countries at the FAO/OIE Global Conference on FMD Control held in Bangkok from 27-29 June 2012. I hope that this workshop will be a success through your productive contributions to come up with substantive Regional FMD Control Strategy to control FMD to save the assets of the poor for the current and future generation and to improve food security in the region. FAO will welcome you all and wish you a fruitful stay in Cairo.

On behalf of Dr. Osama Selim, CVO of Egypt, Dr. Soheir AbdelKadir has made a Welcoming speech stressing the importance of regional coordination of FMD control as the region is dependent on livestock imports.

On behalf of Dr Juan Lubroth, CVO of FAO, Dr. Samia Metwally, has made Keynote Address to participants.

Dr. Markos Tibbo, Livestock Officer of FAO-RNE introduced participants with livestock sector, regional context, priority transboundary animal diseases, workshop objectives and agenda. He introduced included documents included in the conference bag: Concept note and agenda, GEMP manual, Global FMD Control Strategy, Regional FMD control Strategy, and Value chain approach...

Dr Metwally and Dr Sumption presented Briefs on the Global FMD Control Strategy 2012 with acknowledgements to PCP team in FAO, EuFMD and OIE. She has introduced Joint FAO/OIE Global FMD Control Strategy endorsed by more than 100 countries in Bangkok in June 2012, from its inception to its finalisation, including the Global and Regional concerns of FMD, challenges of FMD control, FMD-PCP, PCP stages, and Regional roadmaps. The 4 pillars of the 15 year-FMD Control Strategy: 1) The FMD Control Strategy combines and integrates the tools and instruments of FAO and OIE (PCP, PVS, GF-TADs, OIE Terrestrial Animal Health Code, OIE-recognised FMD-free status); 2) The FMD Control Strategy strengthens the vital disease control support functions: laboratories (national, regional, coordinating global lab and Networks; staffing), epidemiology (national focal points, Collaborative Centres, Networks; additional staff) vaccines (availability, quality assurance, correct use and vaccination planning); 3) In the more advanced FMD-PCP control stages the FMD Control Strategy supports emergency responses, identification of farms and animals, biosecurity and public-private partnerships; and 4) The Strategy advocates for continued research, in particular in the field of diagnostics, strain characterization, vaccines, vaccine quality control and epidemiology.

The FMD Control Strategy aims at synchronous worldwide progress and spells out global targets on a 15-year horizon, with 5-year periods for evaluation and management, both

for Component 1 (FMD) and Component 2 (Veterinary Services), Component 3 of the Strategy, improvement of other disease control efforts and finding sensible combinations, has to be worked out in and for each (sub) region, with an important role for the regional organizations and the Regional GF-TADs Steering Committees. The action plan comes at country level – for each of the PCP stages and for each of the Strategy components, at regional level (for stages 1 - 5), and at global level (for stages 1 – 5). Using the momentum of Bangkok, countries where FMD is still endemic will be stimulated to step up their control efforts using the Progressive Control Pathway; countries where FMD has been controlled as well as development partners, will be requested to increase their support for FMD control at source (usually in developing countries). Specific attention is needed for countries in the FMD virus pool regions 3, 4, 5 and 6 as indicated by the port folio review of the Global Strategy; socio-economic studies will be stimulated to provide further evidence of the damage caused by FMD; In regions where incentives for FMD control appear to be lacking, studies and workshops will be initiated to develop multi-disease approaches specific and optimal for the region; specific support will be requested from development partners to fund the regional and global activities foreseen under the Global Strategy. The Strategy and other documents can be found www.FMDconference2012

Dr Sumption has described the Regional FMD situation. He has elaborated FMD virus pools and circulation, and disease spread risks. His second presentation was on PCP – definitions, stage assessment and application to FMD management. He has clarified different stages of FMD-PCP:

- Stage 1: to gain an understanding of the epidemiology of FMD in the country and develop a risk-based approach to reduce the impact of FMD;
- Stage 2: A strategic FMD control plan that has the aim of reducing the impact of FMD in at least one zone or husbandry sector is developed (monitoring of circulating strains and risk in different husbandry systems; risk-based control measures are implemented for the sector or zone targeted, based on the FMD strategic control plan developed in Stage 1; impact of FMD is being reduced by the control measures in at least some livestock sectors and/or zones; there is further development of an enabling environment for control activities);
- Stage 3: Progressive reduction in outbreak incidence, followed by elimination of FMD virus circulation in domestic animals in at least one zone of the country: a revised, more aggressive control strategy that has the aim of eliminating FMD from at least a zone of the country has been developed (requires a



comprehensive programme and capacity to deliver; not only vaccination; social impacts may be higher such as movement restrictions; decision needs a comprehensive review of costs, benefits, stakeholder issues and risks)

- Stage 4: there is a body of evidence that FMD virus is not circulating endemically in domestic animals within the country or zone
- Stage 5: maintain zero circulation and incursions; withdrawing of vaccination

Dr Metwally spoke about the FMD laboratory capacities in relation to FMD-PCP stages. She has elaborated samples and sampling procedures, diagnostic requirements for different stages of FMD-PCP as it varies at country, regional and global levels. Dr Metwally elaborated regional and national epidemiology and lab networks and their roles at various levels. The OIE/FAO FMD Reference Laboratory Network against the FMD's Seven Regional Virus Pools was described. The challenges are financial resources, infrastructures (facility, biosecurity & biosafety), shipping and receiving biologics and equipments, equipment maintenance, quality control and assurance, obtaining reagents & consumables, limited number of sample submissions for analysis, political engagement of countries at the national and regional levels, and commitment and support from all involved.

Outcomes of FMD workshops in the region were presented by Dr Tibbo for the workshop on "FMD in Egypt: Challenges & Way Forward" held from 2-3 May 2012 in Cairo, Egypt. The Second workshop on "Emergency FMD control plan in the Maghreb countries" held in Rabat (Morocco) from 23 -25 July 2012 was summarised by Dr L. Puech after a short presentation of the Mediterranean Animal Health Network (REMESA) (http://remesanetwork.org).

On behalf of Dr I. Douglas, L. Puech has presented on "Developing preparedness and contingency plans".

Following the above presentation, updates on PCP self-assessments of countries were facilitated and Country Reports were heard from Algeria, Egypt, Iran (Islamic Republic of), Jordan, Libya, Morocco, Saudi Arabia, Sudan and Yemen. These presentations are available on request.

Dr. Tibbo presented the FAO Regional FMD Control Strategy prepared by George Khoury, FAO's Consultant. Following the presentation, the Regional Strategy was discussed thoroughly in working group discussions and outcomes are summarised in sections 4.1 & 4.2.

As part of the Epidemiology and Informatics for effective FMD control, Dr Amaal Ibrahim has presented on Practical Epidemiology for Progressive Control (PEP-C), a summary of the Training course held in Istanbul in Turkey.

On behalf of Dr Nicoline DeHaan, Dr Tibbo has made presentation on "Enhanced FMD control through the integration of socio-economic approaches". Importance of socio-economic studies in FMD control with examples of impact of FMD, costs and benefits, value chains (how to identify and why) and example of the PCP were covered.

Roadmap for FMD-PCP was done for the participating countries which is summarised in section 4.3. The PCP Roadmap obtained from previous meetings – Istanbul, Dubai, Bangkok, and Nairobi were used to complete for those countries that were not in attendance. Countries will submit their claims (self-assessments reports) for evaluation by designated FAO/OIE offices. These are expected to send their reports to by early February 2013.

Participants received all presentations on a CD-ROM upon their departure to their respective destinations.

# 4. MAJOR WORKSHOP OUTCOMES

Outcomes of the discussions are summarized in **sections 4.1 and 4.2**. The workshop has:

- Improved understanding of the Global FMD control strategy and endorsed Regional FMD Control Strategy for a coordinated and harmonized FMD control under the Global framework of FMD control.
- 2. Strengthened capacity of participating countries in the FMD risk analysis and PCP for effective control of FMD in the region
- 3. Improved the capacity of member countries in assessing their diagnostic capacities and epidemiosurveillance systems, preparedness and response plans, coordination at various levels, and areas for research
- 4. Contributed ways for regional coordination and developing projects and resource mobilization.

5. Allowed PCP assessment and roadmap for countries in their efforts to control FMD (section 4.3)

Outcomes of working group discussions on draft regional FM control strategy, epidemiology and lab diagnosis is summarized below.

# 4.1 DRAFT REGIONAL FMD CONTROL STRATEGY

Discussion item	Conclusions/Recommendations	Action, if any
1) Direct country benefits of the regional FMD strategy? How to improve it?	<ul> <li>The strategy benefits all countries as it improves the sanitary status</li> <li>All participating countries (both importers and exporters) approved the Regional FMD Control Strategy as important</li> <li>For the countries with an "FMD advanced status" (Algeria, Morocco, Tunisia): improvement of the situation in neighbouring countries helps to retain (and improve) their status</li> <li>The benefits are the exchange of data between countries</li> <li>To improve the strategy it should include baseline studies:         <ul> <li>Regional disease situation</li> <li>Socio-economical impact</li> <li>Resources mobilization</li> </ul> </li> </ul>	<ul> <li>Draft Regional FMD         Control Strategy to be         reviewed by FAO         consultant         incorporating these         comments (FAO)</li> <li>Draft Regional FMD         Control Strategy to be         shared with OIE for         comments and then         shared to member         countries as soft copy         for any further         comments (FAO to         coordinate with OIE,         member countries to         respond timely; FAO         to ensure translation         into Arabic and         French)</li> </ul>
2) Neighbouring coordination addressed? How to improve?	In the North African region, the sub-regional coordination is highly addressed; in particular through the OIE/FAO Regional animal health centre (RAHC) and the Mediterranean animal health network (REMESA, www.remesanetwork.org), created and conducted by the CVOs. Such	<ul> <li>Use REMESA model to motivate creation of sub-regional REMESA-like network for coordination and harmonisation (FAO)</li> <li>Facilitate the selection of a regional laboratory and</li> </ul>

FAO

- a network could serve as a model for other sub-regional coordination
- Improvements could consist in the appointment of a regional leading laboratory (future reference centre) and epidemiology centre
- Include task-force/working group on FMD control on borders between countries with regular reporting between counties especially on borders through focal points (task force group)
- Establish buffer zone on borders between 3 countries
- Regular meetings and workshop
- Routine surveillance in risk area between counties
- Cooperation between stakeholders in critical areas (livestock owners and government)
- Designate Regional Laboratory for FMD testing at border and Quarantine
- Enforce reporting through:
  - Showing the benefits of reporting
  - Apply KISS principle (make sure it is not a complicated process)
  - Animal health information flow!!!
- For trading: Sign agreements related to live animal trading similar to WTO agreements, for example
- Saudi Arabia expressed their support to the regional strategy by providing financial support to countries and Iran offered donation of vaccine. FAO will take a lead in

- epidemiology centre (FAO); once the selection made, the centre to discuss with FAO and OIE on possibilities to apply as Reference Centre
- Form taskforce/working group on FMD control on borders (buffer zone), and develop regional lab services for auarantine testing at border, joint routine surveillance in high risk area, improved reporting, coordinating stakeholders (Countries with or without FAO involvement)
- Next meeting in 6
  months (FAO to
  organise in
  coordination with OIE)
- Capacity building on reporting and how to show its benefits and enforce reporting (FAO, Countries)
- Signing agreements related to live animal trading similar to WTO agreements (OIE, Countries)

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# 3) Big issues that must be given priority?

facilitating such supports to countries

- Better knowledge of animal movements, not only for trade but also for traditional transhumance.
   This will allow the identification of high risk periods and areas and consequently the priority control measures (targeted vaccination, sampling which are costly); enforcing animal movement control
- Stress mutual benefits (importers supporting exporters) (example supporting by donation of vaccines); KSA offered to contribute through this model.
- Prepare a project document to seek donation to establish the Regional FMD Centre (Research and RRC)
- Establish reference lab
- 4) Ideas for more national involvement to the regional support units?
- National assessments of FMD related losses (socioeconomics), conducted by international organizations (FAO for example) is needed
- Regional strategic stocks of vaccines / antigens
- Facilitation of information exchanges in established framework (like REMESA) with dedicated contact persons

- Conducting studies on animal movements, risk assessments and analysis considering high risk periods and areas (FAO subject to funding)
  - Soliciting funding from importing countries (vaccines and vaccination costs)
    (Bilateral agreements among countries with or without FAO's moderation)
- Preparing regional proposal for regional coordination and cost established for FMD reference lab (FAO, OIE)
- Socioeconomic studies (FMD)
- Regional stocks of vaccines/antigens (regional reference lab / antigen bank)
- Facilitation of information exchange (a dedicated network to be established, FAO to take the lead)

# 4.2 EPIDEMIOLOGY AND LABORATORY DIAGNOSIS

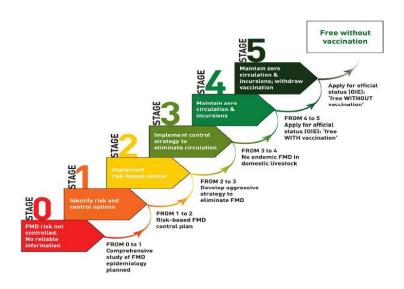
Discussion item	Conclusions/Recommendations	Action, if any
Sub-regional	<ul> <li>Implementation of sub regional centres</li> </ul>	<ul> <li>Virtual centre</li> </ul>
centre	(like the FAO/OIE centre in Tunis) with the	established (FAO to
	following competences:	take the lead)
	o Epidemiologist	
	o Socioeconomics specialist	
	o Prophylaxis specialist	
Designation of a	<ul> <li>After approval of the hosting Government</li> </ul>	<ul> <li>Adopting criteria for</li> </ul>
regional	<ul> <li>Meeting the biosecurity standards</li> </ul>	selecting a regional
reference	<ul> <li>Easy to access (in a city with good air</li> </ul>	reference laboratory
laboratory	service)	(FAO/OIE)

PCP-Roadmap reported in Section 4.3 and is obtained by pooling from previous meetings – Istanbul, Dubai, Bangkok, and Nairobi and the present workshop in Cairo. Countries will update their claims upon submission of their self-assessments reports which will be evaluated or examined by FAO/OIE GF-TADs. Submissions to OIE for recognition for stages 3 and above would remain to be maintained as per the guidelines.



# 4.3 PCP ROADMAP OF COUNTRIES IN THE NENA REGION

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Algeria	OIE-CP									
Bahrain	1	2	2	3	3	3	4	4	4	4
Egypt	1	1	1	1	2	2	2	2	3	3
Iran	2	2	2	3	3	3	4	4	4	4
Iraq	2	2	2	2	2	2	2	3	3	3
Jordan	1	1	2	2	3	3	4	4	4	4
Kuwait	2	2	3	3	3	4	4	4	4	4
Lebanon	1	1	2	2	3	3	3	4	4	4
Libya	1	1	1	2	2	2	2	2	3	3
Morocco	OIE-CP									
Mauritania										
Oman	2	2	3	3	3	4	4	4	4	4
Qatar	2	2	3	3	3	4	4	4	4	4
Saudi Arabia	1	1	1	1	2	2	3	3	3	4
Sudan zone A	1	2	2	2	2	2	2	3	3	3
Sudan zone B	1	2	2	2	2	2	2	2	2	2
Sudan zone C	1	2	2	2	2	2	2	2	2	2
Syria	2	3	3	3	4	4	4	4	5	5
Tunisia	OIE-CP									
UAE	1	2	2	3	3	3	4	4	4	4
Yemen	1	1	1	1	2	2	2	2	3	3



# **ANNEX 1: WORKSHOP AGENDA**

Venue: Cairo Marriott Hotel & Omar Khayyam Casino 16 Saray El Gezira Street, Cairo, 11211 Egypt

04 Dec	Global Strategy for FMD control, FMD-PCP and	Chair/Facilitators
	countries self-assessments	
0800-0830	Registration	M. Mohamed
0900-0930	OPENING	Moderator: Markos Tibbo
	Opening address by FAO Regional Representative	Abdessalam Ould Ahmed, RR of FAO-RNE
	Welcoming address by host country official	Soheir Abd El- Kadir on behalf of Osama Selim, CVO – Egypt
	Keynote address	Samia Metwally, FAO-AGAH
	Workshop objectives and agenda	M. Tibbo, FAO- RNE
	Briefs on Global FMD Control Strategy 2012	S. Metwally, FAO-AGAH
10:15-10:35	Coffee Break	
SESSION I	PLENARY SESSION	Chair: Ahmed Al-Majali (FVM, JUST)
10:35-11:15	Regional FMD situation	K. Sumption (EuFMD)
11:15-11:30	PCP – definitions, stage assessment and application to FMD management	K. Sumption (EuFMD)
11:30-12:00	Outcomes of FMD workshops in the region	M. Tibbo (FAO- RNE) & L. Puech (FAO-SNE)
12:00-12:30	FMD Laboratory capacities in relation to FMD-PCP	S. Metwally

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	stages	(FAO-AGAH)
12:30-12:45	Developing preparedness and contingency plans	L. Puech
12:45-13:00	General discussion	Facilitator
13:00-14:00	Lunch	
SESSION II	COUNTRY REPORTS	Chair:
		S. Metwally
14:00-14:45	Update on PCP self-assessments of countries	K. Sumption
		(EuFMD)
14:45-15:15	Country reports (PCP stage assessments; 10 min, 3	
	countries) Algeria, Egypt, Iran (Islamic Republic of)	
15:15-15:30	Coffee Break	
15:30-17:00	Country reports (PCP stage assessments; 10 min, 9	
	countries) Jordan, Libya, Morocco, Saudi Arabia,	
	Sudan, Yemen	
End of Day1	Summary	Facilitator

05 Dec	REGIONAL STRATEGY & EPIDEMIOLOGY AND	Chair/Facilitato
	SOCIOECONOMICS	rs
SESSION III	REVIEWING OF REGIONAL STRATEGY &	Chair:
	EPIDEMIOLOGY AND SOCIOECONOMICS	K. Sumption
0830-0930	Draft Regional Strategy for FMD control	M. Tibbo
	PCP assessment and progress in the region	A. Al-Majali
	<ul> <li>Plan to complete current stage and planned</li> </ul>	
	activities, PCP Progression to 2020	
	<ul> <li>Requests for assistance, including activities of</li> </ul>	
	laboratory and epidemiology network	
	<ul> <li>Feedback on PCP checklist/ assessment</li> </ul>	
	process	
0930-1000	Discussion	
10:00-10:00	Coffee break	
10:00-10:30	Epidemiology and Informatics for effective FMD	Amaal Ibrahim
	control	

11:30-12:00	Enhanced FMD control through the integration of socio-economic approaches	M. Tibbo
SESSION IV	GROUP WORK SESSION	Chairs and Facilitators
12:00-12:45	<ul> <li>Working group sessions/building networks</li> <li>Epidemiology and Informatics network</li> <li>Joint Laboratory-Epidemiology-vaccines network</li> <li>Regional Coordination and resource mobilisation</li> </ul>	
12:45-13:45	Lunch	
13:45-14:30	Group work (continued)	
14:30-15:00	Reporting from Working Groups	A. Al-Majali
15:00-15:30	Coffee break	
SESSION V	CLOSING SESSION	
15:30-15:45	Summary and recommendations	Facilitator
15:45-16:00	Host-country official FAO	S. Abd El-Kadir S. Metwally

# **ANNEX 2: LIST OF PARTICIPANTS**

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# ANNEX 3: OUTCOMES OF WORKSHOP EVALUATION

Figure 1 summarises results of anonymous workshop evaluations. The satisfaction rate by participants was 81.6 to 90.8% for venue, facilities, facilitators scientific qualifications, usefulness of assistance provided, suitability of methodology used, expectations, objectives clarity, among others. The participants were qualified and well versed of the subject. They are able to advise others upon return to their countries.

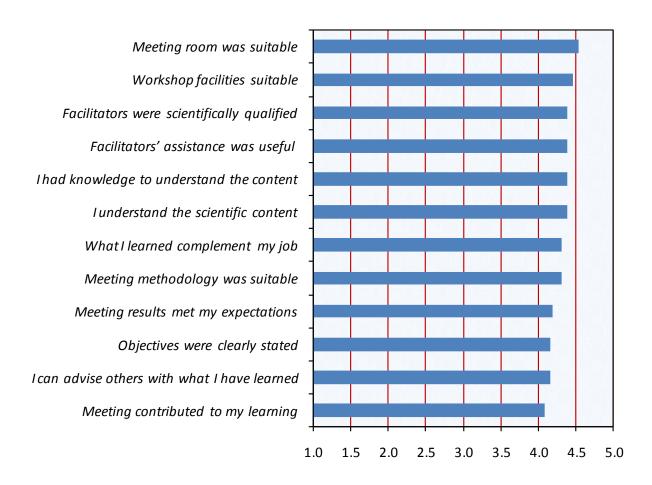


Fig. 1 Workshop Evaluation Results (Scale 1-5: 5, strongly agree; 1, strongly disagree)

Form results not presented in Figure 1, a two-third of the participants suggested FAO to increase number of participants to such an important workshop. A total of 62% of them advised to provide documents before their arrival to the workshop and demanded (54% of them) the duration of the

workshop as well as discussion time to be increased. A third of the participants suggested that the workshop could have benefited by making the objectives clearer and contents more interesting.