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# Report of the Fourth Meeting

## of the WHO Alliance for the

## Global Elimination of

## Blinding Trachoma

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**Geneva, Switzerland**  
**(1 & 2 December 1999)**



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## Introduction

This meeting which was the fourth since the creation of the Alliance for the Global Elimination of Trachoma in January 1997 gathered about 75 representatives from endemic countries, universities, nongovernmental organizations and the private sector to report and further discuss progress and research issues on the prevention and control of blinding trachoma.

Dr Y. Suzuki, Executive Director of the Health and Social Change Cluster welcomed the participants and expressed his appreciation on the success of the Alliance as a working party and driving force for elimination of blinding trachoma. After recalling the developments made so far in terms of operations research and programme implementation, Dr Suzuki outlined the main objectives of the meeting which were as follows:

- 1) to evaluate the results of the testing of the draft trachoma rapid assessment manual and to agree on the contents of the current version for publication and dissemination;
- 2) to present a suitable mechanism for central bulk purchasing of the WHO recommended low-cost trichiasis surgery kit;
- 3) to bring the members up-to-date with ongoing research and field activities;
- 4) to discuss the future of the Alliance in the context of the new Global Initiative for Elimination of Avoidable Blindness "*Vision 2020: The Right to Sight*", launched by Dr G.H. Brundtland (WHO Director-General) in February 1999;
- 5) to discuss the further identification and mobilization of resources for global action;

Dr R. Porter, Executive Director of Sight Savers International, who had acted as Chair of the Alliance for the past two years, announced the end of his term and introduced his successor Dr L. Pizzarello, Medical Director of Helen Keller Worldwide, previously Vice-Chair. Both were applauded and thanked for their respective contributions towards the development of the Alliance. Professor Ton Thi Kim Thanh, National Coordinator for Blindness Prevention in Viet Nam was nominated as the new Vice-Chair.

In view of the increasing size of the Alliance, it was decided that the term of office for the Chair/Vice-Chair would be reduced to one year to allow for more rotation among the various parties.

Dr Hans Limburg, Senior Research Fellow, and Professor G. Johnson, Director, International Centre for Eye Health served as rapporteur(s).

The draft agenda (Annex 1) was adopted without modification.

The list of participants is included as Annex 2.

# 1 Reporting of activities undertaken since the previous meeting

## 1.1 Activities reported by the secretariat of the WHO Alliance for Global Elimination of Trachoma by the Year 2020 (GET 2020)

<b>PBD REPORTED ACTIVITIES FOR THE PERIOD 16 OCTOBER 1998 – 30 NOVEMBER 1999</b>	
<b>ACTIVITIES</b>	<b>STATUS</b>
<b>COUNTRY VISITS FOR NATIONAL PROGRAMME DEVELOPMENT AND MEETINGS</b>	
<ul style="list-style-type: none"> <li>• Technical assistance for implementation of trachoma control activities               <ul style="list-style-type: none"> <li>- Chad (Dr S.P. Mariotti)</li> <li>- Cambodia (Dr S.P. Mariotti)</li> <li>- Ghana (Dr S.P. Mariotti/Dr A.-D. Négrel)</li> <li>- Lao P.D.R (Dr S.P. Mariotti)</li> <li>- Mali (Dr S.P. Mariotti/Dr A.-D. Négrel)</li> <li>- Mauritania (Dr S.P. Mariotti)</li> <li>- Morocco (Dr A.-D. Négrel)</li> <li>- Oman (Dr A.-D. Négrel)</li> <li>- Senegal (Dr S.P. Mariotti)</li> <li>- Viet Nam (Dr Négrel)</li> </ul> </li> <li>• Presentation of the WHO Alliance for GET 2020 and promotion of the SAFE strategy:               <ul style="list-style-type: none"> <li>- Meeting in Accra, (Ghana, 30 November-2 December 1998).</li> <li>- Meeting in Cambridge (UK) for English-speaking countries (14-18 December 1998). Attendance of representatives of Ethiopia, Gambia, Ghana, Myanmar, Nepal, Oman, Pakistan, Tanzania and Viet Nam.</li> <li>- Meeting in Bamako (Mali) for French and Portuguese- speaking countries. (26-30 April 1999). Attendance of Algeria, Burkina Faso, Cambodia, Cameroon, Central African Republic, Djibouti, Guinea, Guinea-Bissau, Lao PDR, Mauritania, Morocco, Mozambique, Niger, Senegal, Chad.</li> <li>- Meeting in Kunming (P.R of China, 1-4 November 1999): Participation of representatives of the Provinces of: Anhui, Chong Qin, Hainan, Liaoning, Ning Xia, Qieng Hai, Shaanxi, Shanxi, Shandong, Sichuan, Tianjin, Yunnan.</li> </ul> </li> </ul>	<p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p>
<b>PRODUCTION &amp; DISSEMINATION OF DOCUMENTATION</b>	
<ul style="list-style-type: none"> <li>• Dissemination of informal material (Alliance reports, training manuals, guidelines, newsletter, etc....)</li> <li>• Preparation and dissemination of the report of the third meeting of the WHO Alliance for GET2020 (English and French)</li> <li>• Preparation and dissemination of the report of the International Training Workshop held in Cambridge, UK</li> <li>• Preparation of the report of the International Training Workshop held in Bamako, Mali</li> <li>• Preparation of a Trachoma Atlas based on the information available</li> </ul>	<p>Ongoing activity</p> <p>English completed</p> <p>French in press</p> <p>Completed</p> <p>Ongoing activity</p>

<b>PBD REPORTED ACTIVITIES FOR THE PERIOD 16 OCTOBER 1998 – 30 NOVEMBER 1999</b>	
<b>ACTIVITIES</b>	<b>STATUS</b>
<p><b>OPERATIONS RESEARCH AND FIELD STUDIES</b></p> <ul style="list-style-type: none"> <li>• Assessment of the quality of trichiasis surgery in the Kingdom of Morocco</li> <li>• Assessment of the quality of trichiasis surgery in the Sultanate of Oman</li> <li>• Field testing of the Trachoma Rapid Assessment in The Gambia, Ghana, Nigeria Cambodia (phase 1) and Lao (phase 1)</li> <li>• Further testing of the low-cost surgery kit (Burkina Faso)</li> <li>• Development of the Trachoma HealthMapper Module, in collaboration with WHO/CDS/HealthMap</li> </ul>	<p>Completed</p> <p>Completed</p> <p>Completed Ongoing</p> <p>Ongoing activity</p> <p>Ongoing activity</p>
<p><b>TRAINING ACTIVITIES</b></p> <p>See "Meetings" above</p>	<p>Completed</p>
<p><b>INFORMATION &amp; COORDINATION ACIVITIES THROUGH THE ALLIANCE MEETINGS</b></p> <ul style="list-style-type: none"> <li>• Preparation of the Fourth Meeting of the WHO Alliance for GET in Geneva, Switzerland (December 1-2)</li> <li>• Finalization of a "Guide for Environmental Sanitation and Improved Hygiene" (Reference:WHO/PBD/GET/00.7)</li> </ul>	<p>Completed</p> <p>Guide to be printed before the end of the year</p>
<p><b>OTHER ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>• Collaborative work with the WHO/School Health Project (Mauritania, Senegal)</li> <li>• Participation in meetings/workshops of the International Trachoma Initiative (Country workshops, technical committees &amp; meetings)</li> </ul>	<p>Ongoing activities</p>

## **1.2 Activities reported from endemic countries present at the meeting**

### **1.2.1 Algeria (Professor D. Hartani)**

Trachoma is still considered a public health problem in the Willayas of El Oued and Bechar, situated in the south-east region of Algeria. A trachoma rapid assessment carried out in November 1998 in the rural population of El-Oued Willaya has estimated the global prevalence of trachoma at 68%. In fact, a high prevalence of trachoma has been found in the majority of the communes included in the assessment. Although all stages of the disease have been found among the population screened, there appears to be no significant difference between the sexes in terms of frequency and severity.

The TRA has revealed a prevalence of active trachoma among children of 69.8% and a prevalence of potentially blinding and blinding trachoma in people over 15 years of 4.6%. It also showed that blinding trachoma also affects young people under the age of 15 (prevalence 0.3%) and that it is significantly higher among women than men. The prevalence of trichiasis represents 1% of the population in 10 out of the 12 communes surveyed and the prevalence of severe forms of

trachoma represents 5% in 6 of the 12 communes. No active trachoma has been identified in the schools located in the El-Oued town centre and very few cases of trachoma have been found where a water supply exists.

Based on the results of the TRA, the following recommendations have been proposed by the National Coordinator:

- 1) Awareness-raising among national authorities for the establishment of a National Trachoma Control Committee (NTCC);
- 2) Implementation of a National Trachoma Control Committee and appointment of a Trachoma National Coordinator;
- 3) Organization of an information seminar including potential partners and all actors wishing to take part in trachoma control in Algeria;
- 4) Conducting of further TRA in the South of the country for targeting of risk areas and prioritization of trachoma control activities;
- 5) Establishment of a National Trachoma Control Programme based on the SAFE strategy including an intersectoral plan of action for the elimination of blinding trachoma by the year 2010.

### **1.2.2 Brazil (*Dr N. H. Medina*)**

In the past, trachoma control activities in Brazil focused only on screening and treatment in remaining endemic pockets. Activities were carried out by the health workers of the national trachoma control programme, a vertical programme working outside the National Health System. No long-term strategies for elimination were ever implemented and despite the availability since 1991 of the WHO trachoma grading cards in Portuguese, the use of the old grading system has been maintained due to the absence of training.

In 1998, a Trachoma Control Technical Committee was established within the Ministry of Health with the objective of providing technical advice to the new staff of the trachoma control programme. Following a review of the available data, it became apparent that trachoma activities had decreased with the staff of the programme progressively retiring and in the absence of recent evidence of the problem, a new assessment of the trachoma situation was recommended.

A national trachoma training workshop was therefore organized in 1998 in the North-East State to discuss trachoma control activities with the 15 state coordinators and in 1999 four other training workshops were conducted.

Examinations carried out within the framework of these training workshops in areas considered to have endemic pockets showed a very low prevalence of trachoma. A high prevalence of TT and CO was however noted amongst the Indians Rupides of the High Niger River of the Amazon State and amongst the Indians of the Tocantins State. Although further surveys have shown that other ethnic groups are affected, it was recommended to prioritize activities among the Indian population for the following year.

Operational research is ongoing through a study on the prevalence of the disease and the use of azithromycin vs tetracycline ointment in school children in Sao Paulo City. The preliminary data show a prevalence rate of 2% among the 30 000 children examined and the first control of the two treatment schemes is ongoing.



The following activities were proposed for 2000:

- 1) Conducting a national trachoma prevalence survey
- 2) Training of personnel for integration of trachoma activities within the PHC system
- 3) Development of training materials and publication of a trachoma manual
- 4) Development of an information system for trachoma

### 1.2.3 Burkina Faso (*Dr L. Ilboudo*)

Epidemiological data on trachoma in Burkina Faso and the structure of the National Blindness Prevention Programme have been presented at previous meetings of the Alliance. Burkina Faso has adopted the SAFE strategy to set up and implement its trachoma control programme.

The current action plan focuses national efforts and those of the Programme's partners (mainly Helen Keller Worldwide) on the former provinces of Gourma, Gnagna and Tapoa (zone II), which account for approximately one tenth of the national population, i.e. some 1 100 000 people. Recent epidemiological surveys have reported a 45.5% prevalence of active trachoma and an 8.3% prevalence of trichiasis for the area as a whole.

The different activities, the timetable and the cost of the action plan are set out in Table 1.

**Table 1: Plan of action for 1999**

Activities	Schedule			Responsibility	Cost (CFA francs)	
Training of trichiasis operators (20)		x		CNLC*	4 036 515	
Training of supervisors (2)		x		CNLC	504 495	
Training of IEC workers		x		CNLC, DRS ** Fada Ngouma, APBAM DPBA	2 151 735	
Supervision of trichiasis operators and IEC campaign		x	x	x	CNLC	3 676 320
Qualitative survey of obstacles to antibiotic use		x			CNLC	3 052 500
Data entry and analysis		x	x	x	CNLC	1 248 750
Trichiasis surgery		x	x	x	CNLC DRS Fada Ngourma	5 050 500
Messages on local radio		x	x		CNLC	1 396 380
<b>TOTAL</b>						<b>21 117 195</b>

CNCL = National Centre for Blindness Prevention

DRS = Regional Health Directorate

ABPAM = Association burkinabé pour la promotion des aveugles et malvoyants

In order to provide case management for trichiasis patients, the plan includes training of 20 trichiasis surgeons. The Trabut method, which has already been widely practised in the country for a number of years, is taught in a 12-day training cycle comprising two days of theoretical and 10 days of practical training. This element of the plan is progressing well. The staff trained will be sent to the three provinces in order to offer the best possible coverage of surgical treatment, given the limited human resources: ten of them will be assigned to Gourma, five to Gnagna and the five others to Tapoa. Surgery is undertaken in the health centres as soon as the trained health worker is present. Purchase of low-cost surgical kits (to carry out the Trabut procedure) and their provision free of customs duty are still-unresolved problems, which are responsible for delaying the proper implementation of this part of the plan.

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A knowledge-attitudes-practices survey is planned. It will make it possible to better identify the obstacles hindering proper use of antibiotics by the populations in these three provinces (in association with Helen Keller Worldwide). It is also planned, again in association with Helen Keller Worldwide, to determine which information to publicize in an Education, Information and Communication campaign, to design suitable educational material and to train 200 health workers to spread relevant messages to target audiences about the prevention and case-management of the different forms of trachoma.

Two supervisors have been trained to manage the field staff and to follow up the activities undertaken in connection with the implementation of this plan. Large-scale treatment using 1% tetracycline ointment will round off this cluster of activities. When this plan of action has been carried out in zone II, trachoma control will become a priority for zone III. The National Committee for Trachoma Control has still to be set up and made operational.

The establishment of the WHO Alliance for the Global Elimination of Trachoma by the year 2020, of an ever-expanding network of potential partners and the availability of the SAFE strategy give grounds for greater optimism about trachoma control in Burkina Faso than in the past.

#### **1.2.4 Cambodia (*Dr U. Yutho*)**

With a population of 11 million, the blindness prevalence rate in Cambodia is estimated to be 1.2%. Despite the presence of many health related NGOs, eye care service delivery is still very poor in Cambodia and does not cover the basic needs of the population. This is mainly due to the lack of health infrastructure and to the shortage of qualified personnel and materials/facilities. There are three levels of eye care delivery in Cambodia. The secondary and primary levels are grouped into operational districts serving at least 100 000 people.

Current estimates show that trachoma is a major problem in Cambodia. In Northern Cambodia, it is estimated that 262 500 people have active trachoma (TF/TI) and that 171 000 people have trichiasis (1998). These figures increase in the southern, drier part of the country.

Preliminary surveys have shown that the prevalence of TF and TI in children under 10 years is 2.5%. In children under five years, this represents approximately 3.2%. Similar surveys conducted in the north-west of Cambodia found the prevalence of TT to be 0.5% in women over 16 years. In the Central region, a 1994 survey found TF to be 18.6% and TI to be 5.7% in children under 16 years and TT to be 4.3% in adults. Although trachoma is not a leading cause of blindness, hospital and eye unit reports indicate that the problem may be more widespread than originally thought. In fact, trachoma is a major cause of blindness among hospital patients. Furthermore, it is suspected that many people with trachoma will never show up at a health facility.

These findings are supported by the 1997 Cambodia Socio-Economic Survey (SES) which found that in the rural sector, more than 68% of households relied on unprotected wells, ponds, rivers or streams as their main sources of drinking water. In urban areas other than Phnom Penh, these sources were used by 47% of the households. Tube pipe wells or boreholes served 16.6% of the rural areas households and 22.6% of that of the urban areas (excluding the capital). The 1997 SES also found that 85.7% of households in rural areas, and 57.7% of households in urban areas and 14.9% of households in Phnom Penh had no toilet facilities. Only about 3.5% had toilets connected to public sewerage in the rural sector. These statistics show how the general poor environmental sanitation conditions contribute to the widespread of the disease.

Although a National Blindness Control Programme exists in Cambodia, there is as yet no official National Trachoma Control Programme. However, many trachoma control activities are being carried out at all eye care levels. The National Sub-Committee for Prevention of Blindness provides overall support and coordination for these activities in cooperation with a group of local doctors and supporting NGOs and international organizations. The activities of this sub-committee are coordinated by a national coordinator.

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Current control measures are based on the SAFE strategy and require further strengthening and support.

- **Surgery:** Trichiasis surgery using the bilamellar tarsal lid rotation procedure accounts for between 2 to 7% of all ophthalmic operations carried out in the secondary centres. Training is being provided to BEDs regarding this procedure. Further plans are being developed to ensure increased identification, referral and uptake of surgical services for people with trichiasis. Community-based lid surgeries, provision of services and further training may be required.
- **Antibiotics:** Antibiotic treatment is provided by the existing eye care centres within the provinces and also by health centres with staff trained in primary eye care. Trachoma currently accounts for 4 to 7% of all outpatient visits per year at the secondary level centres. Tetracycline ointment is currently the antibiotic of choice in all the eye centres.
- **Facial Cleanliness and Environmental Changes:** These activities are carried out mainly at the community and health centre level with health centre staff providing eye health education as part of an integrated approach to primary eye care. School eye health activity has been developed and screening is being carried out in some schools by the different NGOs. Various eye health education materials are also being developed as part of a process to increase awareness. Various other developmental NGOs are involved with communities in the digging of boreholes and VIP latrines. However, further efforts are required to improve intersectoral collaboration to tackle the trachoma problem.

The Cambodia National Primary Eye Care Programme, the pilot phase of which is currently being carried out in three provinces (Kandal, Siem Reap and Takeo) by HelpAge International (HAI) and Helen Keller Worldwide, in collaboration with the MOH, addresses the problem of trachoma through training of district health workers. The training programme includes diagnosis and treatment of trachoma and education on prevention of the disease. Community-health workers and volunteers will also be trained in identification for referral and prevention as part of a larger training on basic eye problems.

A rapid assessment of trachoma and its risk factors is being planned to determine where there is blinding trachoma in Cambodia and to measure the magnitude and severity of the problem. The findings of this assessment could serve as a base for the establishment of a National Trachoma Control Programme.

### 1.2.5 Chad (*Dr M. Madani*)

The prevalence of blindness in Chad is estimated to represent approximately 2% of the global population. According to a partial survey carried out in 1985, the main causes of blindness in Chad are, in order of importance, cataract, trachoma, glaucoma, corneal opacities and onchocerciasis.

A National Blindness Control Programme established in 1991 has been operational since June 1992. It consists of four national ophthalmologists and 16 ophthalmic assistants working in six secondary ophthalmic centres. The aim of the NBCP is to reduce the blindness prevalence rate to 1% over a period of 10 years. The main objectives are as follows:

- 1) Strengthening of the training for ophthalmic nurses;
- 2) Strengthening the national capacity of intervention, according to the NBCP's plan;
- 3) Promotion and integration of PEC within PHC.

Trachoma is estimated to represent 25% of all causes of blindness. The disease is found mainly in the Kanem-Lac region, in the Chari-Baguirmi, Batha, Guerra (centre) and Ouaddaï-Biltine (east).

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An epidemiological survey will soon be carried out in the geographic Ouaddaï region with the support of partners such as the Organisation pour la Prévention de la Cécité (OPC), Swiss Red Cross, and the Fonds d'Aide à la Coopération (French government).

A plan of action specific to trachoma control is planned based on the following principles:

- Integration within NBCP;
- Definition of a national trachoma control policy and creation of an intersectoral trachoma control committee;
- Strengthening of the available resources;
- Mobilization of internal and external resources.

Priority activities include the following:

1. Assessment of the trachoma situation (survey, TRA and disease mapping);
2. Training of health personnel in eye health and trichiasis surgery;
3. Integration of PEC in PHC;
4. Promotion of community eye health through IEC;
5. Implementation of a suitable strategy, based on the epidemiological results of the survey.

### 1.2.6 Ethiopia (*Dr L. Adamu*)

Thanks to support received from collaborating NGOs, the following SAFE activities have been carried out since the last meeting:

- **Surgery:** A one-year training course for national ophthalmic nurses was organized at ALERT in Addis Ababa in 1998 with support received from the Lions Clubs. During this training programme, 21 nurses were trained in trichiasis surgery. Since, other NGOs including CBM have been approached to increase the training capacity.

Training sessions in primary eye care (3 weeks) and trichiasis surgery (15 surgeries/trainee) have been provided to 32 Integrated Eye Care Workers with support received from CBM, HelpAge International and World Vision International.

As a result, about 15 000 trichiasis surgeries have been performed in one year in the country.

- **Antibiotics:** As 1% tetracycline eye ointment is expensive and not available in suitable quantities for community-based treatment, the possibility of manufacturing it locally has been suggested and presented to the Alliance for consideration and support.

The International Trachoma Initiative (ITI) has also been requested to consider azithromycin donation for trachoma control activities in Ethiopia.

- **Facial Cleanliness and Environmental Changes:**

Leaflets and posters on trachoma have been prepared in three national languages (Amharigna, Oromigna and Tigrigna) and distributed to all the regions. However, there is still much to be done on the IEC and safe water supply components.

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Two important objectives have been set out for the near future, as follows :

- To upgrade six eye units (within three years) in geographically strategic places of the country, to serve as TT-surgery training centres (proposal submitted to CBM).
- To conduct trachoma rapid assessment in selected districts of each region.

### **1.2.7 The Gambia (*Dr A. Sillah*)**

Trachoma is still the major cause of preventable blindness in The Gambia, and the Department of State for Health has adopted the SAFE strategy for its elimination. Since the last meeting, many activities have been carried out in the field of operations research such as:

- the study on comparison of single oral dose of azithromycin with topical tetracycline for trachoma treatment under operational conditions;
- the longitudinal study of trichiasis in The Gambia;
- the community randomized trial of village vs health centre based surgery;
- a 12-year follow-up of natural history of trichomatous scarring in The Gambia
- A long-term follow-up of lid surgery for trichiasis in the Gambia: surgical results and patient satisfaction;
- the field testing and validation of the WHO draft guidelines for rapid assessment of blinding trachoma have been carried out from May to July 1999; and
- the installation and use of the Management Information and Geographical Information Systems (MIS & GIS) in all the six health divisions.

These activities have been conducted jointly between the National Eye Care Programme and the International Centre for Eye Health. The results are reported in Sections 2, 4, and 8 of the report.

Interventions include training in lid surgery (25 community ophthalmic nurses), trichiasis surgery - 715 lid surgeries were performed in 1999 and a trichiasis surgery camp is planned in the Western Division. Tetracycline is now available at community level for the 900 community- based trained workers and sanitary kits have been distributed to 33 communities considered "at risk".

A new urban eye care programme is planned to improve access to basic health care in underserved urban areas where the prevalence of active inflammatory trachoma is increasing because of factors such as large families, low level of education of head of household, presence of visitors from the rural areas and neighbouring countries, and refugees. It is hoped that this initiative will give the opportunity to identify ways of working with councils within a decentralized health system.

### **1.2.8 Ghana (*Dr M. Hagan*)**

A detailed plan of work proposal for collaboration has been prepared jointly between the ITI and other interested parties following the presentation of the results of the trachoma rapid assessment (see section 2 for details) conducted in the two regions of Ghana suspected to have trachoma, i.e., Northern and Upper West Regions. The study confirmed that in these areas trachoma is a blinding health problem that requires control interventions. It was therefore recommended that for each intervention component of the SAFE strategy, the following criteria be applied :

- High TT score

Target for trichiasis surgery (S)

- High TF/TI score Target for antibiotic therapy (A)
- High TF/TI and risk factors score Target for Facial cleanliness with health education and environmental improvement (F & E)

It was also recommended that other suspected trachoma villages, not assessed during the TRA be also evaluated.

### **1.2.9 Kenya (*Dr J. Karimurio*)**

Since the last meeting, the Kenya Ophthalmic Program (KOP) which is run in partnership between the Kenya Society for the Blind and the government of Kenya through the National Prevention of Blindness Committee has conducted the following trachoma control activities:

1. Mapping and strengthening of PEC activities in most of the eye units of the 18 trachoma endemic districts including Narok, Kajiado, Kitui, Lodwar, Machakos, Meru, Iten, Kapenguria, Isiolo, Maralal and Kabarnet;
2. Provision of tetracycline eye ointment to all government eye units, health centres and dispensaries;
3. Ongoing training of eye care workers in the bilamellar tarsal rotation procedure (BTRP). So far, 29 eye care workers, mainly from the government eye units, have benefited from this training and 18 have been equipped with trichiasis surgical kits. Training sessions are planned for PEC workers from the mission eye units of trachoma endemic areas such as Maua, Kapsawar, Wamba, Mutomo, Kijabe, Ortum, Kaplong, Tenwek, Kilgoris and Chogoria.

The main NGOs involved in trachoma control activities in Kenya include:

- the Kenya Society for the Blind (KSB)
- the Edna McConnell Clark Foundation (EMCF) / Helen Keller Worldwide (HKW)
- the African Medical and Research Foundation (AMREF)
- SightSavers International (SSI)
- Operation Eyesight Universal (OEU) and, hopefully in the near future,
- the Lions Clubs International (LCI).

Trachoma control activities conducted by AMREF in Kajiado within the framework of a pilot project have been evaluated and will be discussed by the National Trachoma Task Force (KOP, KSB, AMREF, LC & EMCF/HKW) for preparation of guidelines for implementation of activities within the national PEC network.

Planned activities include:

- Acquisition of more trichiasis surgery sets,
- More training sessions in bilamellar tarsal rotation procedure,
- Rapid assessments in trachoma endemic districts,
- More scientific research on SAFE.

### **1.2.10 Lao People's Democratic Republic (*Dr V. Visonnavong*)**

There is no available epidemiological data on trachoma in Lao PDR. However, it is estimated that trachoma is the second cause of blindness after cataract. Following a visit to Lao of a representative from WHO/PBD to discuss the trachoma situation, it was agreed that a trachoma rapid assessment would be conducted during the first half of 2000 with technical and financial support from WHO/PBD.

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The SAFE strategy which was also presented to the national authorities during the latter visit was adopted. It will be applied within the context of the existing primary health care network and will benefit from the increasing number of ophthalmic nurses trained recently through the Mekong Cataract-Free Zone Project.

The following long-term objectives have been defined for trachoma control in Lao DPR:

1. Establishment of a National Trachoma Control Committee;
2. Assessment and mapping of main endemic areas;
3. Development of Information, Education and Communication (IEC) strategy and preparation of training material on SAFE;
4. Development of information messages for mothers and children regarding facial cleanliness;
5. Coordination of activities with sanitation services;
6. Coordination with responsible services for the distribution of tetracycline eye ointment in priority areas;
7. Undertaking of operational research to define the most appropriate intervention strategies and for programme evaluation.

A plan of action based on an assessment of the local situation has been prepared in collaboration with WHO/PBD for implementation of the SAFE strategy, as follows:

- **Surgery:**

- Strengthening of trichiasis screening;
- Distribution of surgical equipment/material countrywide; and
- Increase of the number of ophthalmic nurses with surgical training.

- **Antibiotics:**

Provision of 1% tetracycline eye ointment, free of charge, to all hyperendemic districts and availability of the latter in all health centres.

- **Facial cleanliness:**

- Promotion of facial cleanliness at school and through centres for maternal and child health;
- Development and broadcasting of education messages in collaboration with the Health Education Centre.

- **Environmental Changes:**

Establishment of a collaboration with the Water and Sanitation Centre in the framework of the National Prevention of Blindness Committee to discuss the priority intervention in hyperendemic districts/villages and to include trachoma prevention through hygiene in training sessions and information campaigns.

- **Dissemination of all existing information and training material on primary eye care and trachoma control to all the endemic districts.**

### 1.2.11 Mali (*Dr D. Sacko*)

- **Implementation of the SAFE strategy**

In 1999, the various trichiasis surgery services have carried out 1100 operations. Details concerning the distribution of these services are provided below.

Centre	No. of trichiasis operations
Kayes	36
Koulikoro	171
Sikasso	32
Ségou	31
San	148
Mopti	87
Tombouctou	0
Gao	0
Commune V	0
Mobile unit	38
Institut d'Ophtalmologie tropicale de l'Afrique (IOTA)	500
Yélimané	57
<b>TOTAL</b>	<b>1100</b>

Integration of trachoma control activities within the national programme have been intensified especially in terms of training. Approximately 400 health workers (physicians, midwives, nurses) have been trained in screening and treatment of trachoma as well as in Information, Education and Communication (IEC) on trachoma. The latter training also included community development workers and village workers. Further, an IEC campaign on face washing and environmental activities was conducted nationwide.

Overall, the implementation of the SAFE strategy has been delayed due to the need for preparation of the proposal for collaboration with the International Trachoma Initiative (ITI) which has been presented at ITI's Expert Committee in May 1999.

- **Coordination of trachoma control activities**

A national trachoma control committee has been set up for coordination of trachoma control activities. All the partners engaged in blindness prevention in Mali are represented on the committee. Since its establishment, the committee's main activity has been the elaboration of a trachoma control plan in collaboration with the International Trachoma Initiative (ITI).

- **Operational research**

Analysis of the results of the national survey on trachoma prevalence and risk factors, and in particular analysis of the risk factors, has been completed.

A KAP (Knowledge, Attitudes and Practice) study on trachoma is underway. On completion of the study, it is planned to review the messages and existing IEC material in order to incorporate an element concerning the distribution of azithromycin.

In February 1999, a meeting was convened between the Ministry of Health, WHO, and the national and international partners involved in trachoma control to prepare a two-year plan of action for trachoma control in Mali.



### 1.2.12 Mauritania (Prof. S. E. Ahmedou)

Trachoma is the second cause of blindness in Mauritania. It is prevalent mainly in the oasis zones, i.e., in the centre, northern and eastern parts of the country. Its control represents an important part of the activities of the National Prevention of Blindness Programme which has recently been revitalized and strengthened by a strong political will to combat eye diseases and particularly trachoma. The national health policy is based on a primary health care approach which has proved to be very effective, especially in the control of the guinea worm.

Since the last meeting of the Alliance, the following trachoma control activities have been implemented:

1. Establishment of a plan of action in collaboration with WHO. So far its implementation has been delayed by administrative procedures;
2. Organization of a training seminar on SAFE for the ophthalmic nurses in charge of the 13 health regions (13 *antennes régionales*);
3. Awareness-raising on eye diseases and promotion of eye care through the media (TV, radio);
4. Elaboration and printing of a promotional poster on SAFE adapted to the local context.

A survey on the prevalence of trachoma in Mauritania is planned in February 2000 through support expected from the Organisation pour la Prévention de la Cécité. The results will serve as a basis for implementation of the plan of action and resource mobilization for priority activities such as:

1. Uptake of trichiasis surgery;
2. Availability of antibiotic treatment;
3. Training of health personnel.

Mauritania calls upon the members of the Alliance to assist them in achieving the goal of elimination of trachoma by the year 2020.

### 1.2.13 Niger (Dr A. Amza)

The trachoma prevalence survey conducted with support received from the European Union through the WHO Collaborating Centre in Mali (IOTA) has been completed. Disease mapping has been made possible based on the survey results which are reported in the following table:

**Table 1. Results of the prevalence of trachoma survey in Niger (partial results)**

Location (Department)	Children aged 0–10 years	Women aged >15 years	Trichiasis Cases
Agadez	Data analysis not completed		
Diffa	Data analysis not completed		
Dosso	29.3%	0.4%	1 974
Maradi	46.3%	2.6%	18 207
Tahoua	33.0%	1%	-
Tillabéri	30.1%	0.2%	1 275
Niamey	Data analysis not completed		
Zinder	62.4%	4.3%	29 325

Based on the above-mentioned results, it is estimated that the backlog of unoperated trichiasis is approximately 50 000 persons and that an additional 70 000 persons need antibiotic treatment. The

Zinder region which is the most severely affected by the disease will serve as the pilot zone within the framework of the national plan for the elimination of trachoma by the year 2020.

Since the last meeting, the following activities have been carried out:

- Implementation of trichiasis surgery activities performed by 30 duly trained surgeons;
- Training of a further 30 trichiasis surgeons with funding received from EMCF and Pfizer Inc.;
- Development of strategies for Information, Education and Communication in Zinder Department (including 32 districts and 340 villages) to promote SAFE;
- Elaboration of a National Trachoma Control Plan by a multisectoral committee (ongoing);
- Establishment of a collaboration between National Blindness Control Programme and NGOs such as Helen Keller Worldwide (HKW), Carter Center/Global 2000 and Chistoffel-Blindenmission (CBM).

The planned activities for the year 2000 are presented in the following chronogram:

<b>Planned activities</b>	<b>Jan-Mar.</b>	<b>Apr.-Jun.</b>	<b>July-Sept.</b>	<b>Oct.-Dec.</b>
Trachoma mapping				
Continuation of ongoing activities in Zinder				
Evaluation of activities in Zinder				
Elaboration and adoption of national plan				
Launching of national plan				

#### **1.2.14 Oman (Sultanate of) (Dr A. Hussein Juma Al Lawati)**

The meeting was the first opportunity for the Sultanate of Oman to present its trachoma situation and related control activities to the members of the WHO Alliance.

Oman is situated in what was in the past a high trachoma endemic area. In the 1970's, the prevalence of the disease was estimated to be in the order of 70 to 80% and in the 1980's, it decreased to 20 to 30%. More recently, a national blindness prevalence survey conducted in 1996-97 revealed a prevalence of trichiasis of 1.1%. This equals to approximately 17 000 trichiasis cases . The survey also emphasized that 17.5% of the population above 40 years have trichiasis.

To address the backlog of trichiasis cases, the Ministry of Health has undertaken a project to identify and manage trichiasis surgery among the population aged 40 years and above. Screening has therefore been conducted in all the national health institutions and a total of 6300 cases have been registered between October 1995 and December 1997. Out of these registered patients, half have been operated on. Operational research on management of trichiasis and monitoring/assessment of quality of trichiasis surgery has been derived from this activity. The results of this study which were also reported during the meeting are presented in Section 3.

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### **1.2.15 Senegal (*Dr M. B. Sall*)**

Senegal has been part of the WHO Alliance for GET since April 1998. Trachoma control is one of the major components of the National Blindness Control Programme which has adopted the SAFE strategy. So far no epidemiological data on the prevalence of trachoma exist. However, a national survey is planned during the course of 2000 through support from OPC.

In 1998, 658 trichiasis operations have been performed by ophthalmic nurses using the Trabut procedure. Tetracycline ointment is the antibiotic presently used for treatment.

A seminar to define the framework for intersectoral collaboration has been carried out in October 1999 including the relevant ministries (Education, Communications, Water resources, Works, The Family and National Solidarity, Decentralization), health technicians, local authorities and interested NGOs.

Monthly, ophthalmologists and health education workers organize radio broadcasts; and regular consultations in remote villages are being conducted.

Funding is being explored for the training of head nurses, midwives and community health workers.

The objectives for the future are listed below:

1. National trachoma survey to provide more detailed mapping and planning;
2. Make the performance of the entropion-trichiasis technique by trained nursing staff acceptable by the population;
3. Large-scale availability and use of azithromycin at an affordable price;
4. Promotion of eye health at school (training for teachers, involvement of pupils as community relays, screening and treatment of children at school first and then at home);
5. Involvement of local communities for proactive case management;
6. Introduction of a viable intersectoral policy through technical collaboration between developing countries;

### **1.2.16 Tanzania (*Dr S. Katenga*)**

The presence of trachoma has been reported in almost all regions of Tanzania, but mainly in Arusha, Dodoma, Kilimnjaro, Lindi, Mtwara, Morogoro, Mwanza, Pwani, Shinyanga and Singida. It is estimated that about 12 million people out of a total population of 30 million are at risk of contracting the disease and that about 1 to 2 million children aged 1 to 7 years are already infected.

Recently, under the auspices of the National Eye Care Programme, trachoma control activities have been expanded taking into account the SAFE strategy. In January 1999, a National Trachoma Control Programme was established by the Ministry of Health, in collaboration with the International Trachoma Initiative and other interested partners in six selected districts, i.e., Dodoma rural, Kongwa, Mpwapwa, Kondoa, Manyoni, and Kilosa. As a result, the following planning activities have been carried out:

- **Training of regional coordinators in trachoma grading**

In December 1998, three regional eye care coordinators from neighbouring regions to the programme area were trained in trachoma grading. They were given the task to conduct trachoma rapid assessments in their areas in anticipation of an expansion of the programme area. Results indicated that trachoma is a major problem in Igunga, a district in Tabora region neighbouring Singida rural district and Arusha region bordering with Singida region.

- **Trachoma Planning Meetings**

**Dar es Salaam (17-21 January 1999)**

A workshop on expanding trachoma control in Tanzania gathered all existing and potential partners (Ministry of Health, International Trachoma Initiative, Helen Keller Worldwide, SightSavers International, Christoffel-Blindenmission, Tanzania Christian Refugee Services, Tanzania Society for the Blind, World Vision, WaterAid, Centre for Development in Health, Arusha) to discuss the selection of programme area, the mobilization of resources, and the supply of and treatment with azithromycin. At the end of the workshop, recommendations and an action plan were adopted.

**Arusha (8 to 11 February 1999)**

The purpose was to develop a timeline for activities and prepare a budget and funding application to the ITI in collaboration with interested partners.

**Kongwa (20 & 21 April 1999)**

The purpose was to harmonize trachoma control implementation plans developed in Arusha so as to come up with a focused approach on how best to implement the Trachoma Control Programme in the programme area (Dodoma rural, Kongwa, Mpwapwa, Kondoa, Manyoni, and Kilosa districts).

- **Baseline prevalence surveys**

Baseline prevalence surveys were conducted in the programme area from May to September 1999. Children between one and seven years were screened for active trachoma (TF and TI). The following prevalence results were obtained:

**Table1: Baseline prevalence surveys**

DISTRICTS	Total Population ≅1-7 years	TF & TI ≅1-7 years	Prevalence %	Total TT
Dodoma rural	529	251	47.4%	63
Kilosa	506	273	54.0%	13
Kondoa	1122	562	50.1%	39
Kongwa	692	394	56.9%	25
Manyoni	947	656	69.2%	86
Mpwapwa	739	315	42.6%	18

- **Comments concerning the registration, importation and distribution of Pfizer-donated Zithromax®**

i. Zithromax® was registered by the Pharmacy Board of Tanzania in July 1999;

- ii. At ITI's request, a pilot run of Zithromax® distribution was carried out in one village of Kongwa to gain experience with the volume and flow of activities during a full swing distribution session.
- iii. Importation of Zithromax® tablets and syrup for mass distribution in the 36 villages of six districts was organized by ITI.
- iv. Mass distribution of Zithromax® is underway and will be completed by the end of October in all the selected districts. Before and during the distribution, intensive health education messages have been broadcast through the media (radio, television), and through drama and trachoma songs.

- **Future activities**

A planning meeting of partners is envisaged in November to focus on the other aspects of SAFE.

### 1.2.17 Viet Nam (Professor Ton Thi Kim Thanh)

The National Institute of Ophthalmology is the Ministry's official authority for eye care and prevention of blindness in Viet Nam. Established 40 years ago, it has, over the years, set up a network of eye care organized according to five levels: (i) eye centres, (ii) provincial eye stations, (iii) provincial eye departments, (iv) district eye departments and (v) eye departments of medical schools. A strategy to train eye care personnel at all levels has enabled to build a strong eye care capacity. The ratio of ophthalmologist is presently 1/100 000 which is much higher than the WHO recommended figure for developing countries of 1 ophthalmologist/200 000 (Ref. WHO/PBD/97.61/Rev.1).

During several decades trachoma was considered to be the first cause of blindness in Viet Nam. In 1957, the prevalence of active trachoma was estimated to be 67%. A fairly recent survey conducted in 1995 has shown that following many years of control activities conducted under the auspices of the Institute of Trachoma including antibiotic mass treatment with tetracycline, trichiasis surgery, health education, environmental improvement and clean water supply, the prevalence of active trachoma has been reduced to 7%. However, despite the considerable improvements over the last 40 years (see Table 1), it still remains highly prevalent in some areas such as the central and southern coasts, the northern mountains where it is estimated to be above 10% (see Table 2). Besides, other possible hyperendemic pockets than those confirmed by the survey are suspected.

**Table 1. Trachoma situation in 40 years**

Prevalence (%)	1957 n = 78 181	1986 n = 509 446	1990 n = 15 071	1995 n = 26 606
Active trachoma	50-90	19.9	17.5	7.04
Trichiasis	6.42	2.3	1.75	1.15
Corneal opacity (sequella)	-			0.19

**Table 2. Regional prevalence of active trachoma (1995)\* (13 provinces, n = 26 606)**

REGION	TF + TI (%)	TT (%)	CO (%)
Cities	3.64	1.27	0.21
Delta of Red River	8.24	2.97	0.37
Delta of Mekong	3.30	0.28	0.02
Northern Coast	3.73	0.29	0.15
Central Coast	13	3	0.65
Southern Coast	11.81	0.15	-
Northern Mountains	11.83	0.35	0.15
Central Highland	6.15	0.50	-

\* Survey conducted using the simplified WHO Trachoma Grading System

A regional survey on prevalence of active trachoma in children conducted in October 1993 in 10 provinces of Viet Nam showed very moderately high prevalences of TF and TI mostly in the northern mountains and in the Delta of the Red River (see table 3).

**Table 3. Regional prevalence of active trachoma in children (October 1993)  
(10 provinces, n=50 438)**

<b>ZONE</b>	<b>SAMPLE SIZE (n)</b>	<b>TF (%)</b>	<b>TI (%)</b>	<b>TF+TI (%)</b>	<b>P</b>
<b>North Viet Nam</b>					
Delta of Red River	5 030	8.6	2.6	11.2	<0.001
Mountain	25 286	12.7	4.3	17.0	
Coastal	5 097	6.2	0.6	6.8	
<b>Central Viet Nam</b>					
Highland	4 969	6.2	0.7	6.9	<0.001
Plain	5009	3.6	0.6	4.2	
<b>South Viet Nam</b>					
Delta of Mekong	5047	7.5	1.0	8.5	<0.001

The survey also showed that prevalence of active trachoma is higher in the 6-15 years age-group with TF & TI ranging between 12 and 15.5%. The prevalence in children under two years was much lower, i.e., 2.6%, but that of children between two and five years was ranging between 6.7% and 12.1%. These are clear indicators of zones of active transmission.

In order to find out the risk factors in trachoma infection and transmission, the study also examined children's hygienic habits and environmental conditions. Table 4 provides a list of the main risk factors in order of priority.

**Table 4. Classification of risk factors to trachoma infection**

<b>RISK FACTORS</b>	<b>ODDS RATIO</b>
1. Using unclean water for face washing	2.14
2. Face washing less than once a day	1.92
3. Housing with unhygienic latrines	1.64
4. More than three children in the family	1.64
5. Child uses common towel for face washing	1.47

Overall, the recent surveys have demonstrated that despite the enormous progress made during the last 40 years to control trachoma, there remain zones where the disease is still endemic. In order to complete the work already started and to reduce the prevalence of trachoma to the level where it can be handled by the community health centres, more focused activities/interventions are required such as:

1. More surveys to identify areas with prevalence of trachoma above 10% (in adults and especially in children) and to focus treatment on the most affected communities/families;
2. Use of the primary eye care system to manage patients and to prevent new infections in areas where prevalence of trachoma is under 10%;
3. Performance of eye lid surgeries in communities under the supervision of provincial eye centres and mobile teams;
4. Promotion of hygiene through schools and community-health centres.

A donation of azithromycin and funding support by the International Trachoma Initiative will contribute to the implementation of the above-mentioned activities. Long-time partners of the Vietnamese eye care programme such as WHO, UNICEF, Christoffel-Blindenmission, Helen Keller

Worldwide, the Fred Hollows Foundation, the Lions Clubs International will also continue to play a role in the control and elimination of trachoma.

### 1.3 Communications made by other members of the Alliance

#### 1.3.1 Al-Noor Foundation (Dr G. Ezz El Arab)

The Al-Noor Foundation reported on the results of the prevalence of blindness survey conducted in Menofiya, Egypt in 1999 in collaboration with the Ministry of Health, Pfizer Egypt, the British Columbia Centre for Epidemiology & International Ophthalmology and, the Edna McConnell Clark Foundation. The objectives of this survey were as follows:

1. To determine the prevalence and leading causes of blindness and low vision among adults
2. To investigate whether trachoma is a public health problem
3. To determine the prevalence of active trachoma among young children
4. To find out about trichiasis coverage

The results of the study are summarized in table 1

**Table 1. Results of the prevalence of blindness and low vision survey among adults in Menofiya, Egypt**

Prevalence (%)	Causes (%)	
Blindness : 8.2	Cataract	54
	Corneal opacities	18
	Trachoma	8
	Aphakia	4
	Other	16
Low vision : 34.4	Refractive errors	63
	Cataract	5
	Corneal opacities	14
	Trachomatous opacities	6
	Other	12

The total prevalence of active trachoma among children is estimated to be 36.7% of which 30.7% is TF and 5.8% is TI with a larger proportion of TF in the urban population. The overall prevalence of blinding trachoma (TT) is estimated to be 6.5% with a significant distinction between males and females which account for 4.9% and 7.7% respectively.

The measurement of visual acuity among patients with TT showed that 24% were blind and that 50% had low vision. It also revealed that eyes who had undergone TT surgery had a higher prevalence of blindness than those who had not been operated on which raises the issue of the quality of surgery provided. The surgical technique used is tarsal grooving. The recurrence rate after surgery which was estimated to be 45% is also increasing with age. The surgical coverage was shown to be higher among males in the younger age-group (50-59 years). Finally, access to surgery was found to be less a barrier to TT surgery than the quality and acceptance of surgery.

Based on the following results, trachoma control activities are being implemented as follows:

1. Development of education material about trachoma for physicians, nurses and village health workers in collaboration with Pfizer Egypt;
2. Setting up of a community-based training on SAFE for women in the four most affected villages through support from Canada Fund (CIDA);

3. Training of eye surgeons in the bilamellar tarsal rotation procedure and monitoring of the quality of surgery through support from EMCF.

The next plan for Al-Noor is the establishment of an operational trachoma control programme in Egypt.

### 1.3.2 International Development Enterprises (IDE) (*Mr D. Salter*)

IDE is a newcomer in the WHO Alliance for GET 2020. It is a non-profit marketing organization based in Denver, USA and established in 1981 by business people who wanted to apply a business approach to the problem of poverty. IDE currently works in India, Bangladesh, Viet Nam, Cambodia, Nepal, Sri Lanka, Zambia and Haiti. The core of IDE's work to date has been the introduction of low-cost drinking water and irrigation water pumps and equipment through small private sector businesses. In the last ten years, IDE has stimulated the sale of over 1.5 million irrigation pumps, drinking water pumps, and low-cost irrigation systems, each of which were purchased at full cost, and provide multiple benefits for the end-users. IDE is currently implementing a marketing campaign to promote preventive measures against trachoma in Viet Nam for the International Trachoma Initiative.

However, as in Viet Nam, hand pumps and tube-wells do not provide a technologically feasible solution for various reasons, low-cost rainwater storage cement jars could be a viable substitute if available at an affordable cost. The role of IDE will be to establish village-level manufacturers of cement jars and to promote their sale through marketing strategies similar to those used for hand pumps.

### 1.3.3 International Eye Foundation (IEF) (*Ms V. Sheffield*)

IEF reported trachoma control activities in the following four countries: Malawi, Mozambique, and Nigeria.

- **Malawi**

In order to collect the information necessary for planning of eye care services, a survey was conducted in Chikwawa District (Lower Shire Valley) jointly between IEF, the Ministry of Health, Christoffel-Blindenmission and the British Columbia Centre for Epidemiologic and International Ophthalmology. The prevalence of trachoma was estimated and the results of this population-based survey compared with the figures of the 1983 survey. The methodology which was the same as the one used in 1983 consisted in a random selection of clusters drawn from the entire population and based from the Chikwawa census. The results are reported in the following table.

**Table 1. Evolution of the trachoma situation in Malawi (1983-1999)**  
(based on the 1983 and 1999 surveys on prevalence and causes of blindness and low vision)

	Prevalence (%)	
	1983 survey	1999 survey
<b>TF/TI in children aged 1-6 years</b>	<b>36.7</b>	<b>14.0</b>
▪ MkhwiraKasisi	29.1	20.0
▪ Chapananga	21.1	23.8
▪ Ngabu	38.9	14.3
	48.5	8.6
<b>Trichomatous trichiasis (age &gt;50 years)</b>	<b>1.9</b>	<b>1.0</b>
▪ Males	-	0.4
▪ Females	-	1.4
▪ Surgical coverage	-	27.8
▪ Recurrence	-	60.0



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Based on the above results, IEF has defined the following strategy in collaboration with the MOH:

1. Provision of surgical treatment to all patients found with trichiasis through the survey;
2. Strengthening of surgical capacity through the support of two ophthalmologists and two senior ophthalmic assistants and through the provision of facilities and basic surgical equipment;
3. In Chikwana and Nsanje districts, strengthening of existing trachoma control activities (S, F and E) and introduction of the A component mainly in endemic pockets;
4. In other trachoma endemic districts (Knotakota, Nsanje, Salima), assessment of the needs and implementation of the SAFE strategy as appropriate;
5. Strengthening of capacity building mainly in Chikwawa District including water development, sanitation, public health education;
6. Development of a regional approach to trachoma control for southern Africa.

- **Mozambique**

Three major trachoma control activities are planned for 2000:

- 1) *Workshop for ophthalmic assistants*

The objectives of this workshop are as follows:

- Upgrade of medical therapy training
- Upgrade of surgical skills
- Public health education
- Review of available data
- Basic survey/assessment skills
- Identification of sites for rapid assessment
- Provision of motorcycles for outreach activities

- 2) *Trachoma rapid assessment (TRA)*

IEF is planning to conduct a TRA in two to three of the provinces where trachoma is suspected (Gaza, Manica, Zambezia and Niassa) to determine the level of endemicity and the feasibility of conducting a successful and sustainable control programme.

- 3) *Stakeholders workshop* for the elaboration of a plan of action and for mobilization of resources.

- **Nigeria**

In Nigeria, IEF is exploring the development of surgical capacity and is involved in the co-sponsoring of two research studies together with ICEH on the following themes:

- (i) *“Prevalence of trachoma and its risk factors in a rural community of Katsina State”*, and
- (ii) *“Trachoma rapid assessment trial in a sub-district of Northern Nigeria”*.

#### 1.3.4 International Trachoma Initiative (ITI) (*Dr J. Cook*)

The International Trachoma Initiative was established in November 1998 by Pfizer Inc. and the Edna McConnell Clark Foundation with the mission to advance and promote the global elimination of trachoma as a cause of blindness.

ITI is an independent agency which works with international, governmental and nongovernmental organizations to provide operational research and evaluation, education and advocacy.

The donation of azithromycin by Pfizer Inc. is a central element of the ITI's support to the SAFE strategy for trachoma elimination.

In its first phase, ITI will provide treatment to five countries selected from the priority list prepared during the WHO scientific meeting on trachoma held in June 1996, i.e., Ghana, Mali, Morocco, Tanzania and Viet Nam.

#### 1.3.5 SightSavers International (SSI) (*Mr M. Kyndt*)

SSI reported trachoma control activities in the following four countries: the Gambia, Mali, Nigeria and Ghana.

- ***The Gambia***

As part of the E component of the SAFE strategy, sanitary equipment, wheelbarrows, rakes, and other equipment have been provided to villages where prevalence of active inflammatory trachoma was >25% in children less than 10 years. In these villages, the population was encouraged to organize a general cleaning day on a weekly basis. An evaluation of the impact of this environmental measure was carried out five months later. The preliminary results were positive and showed that 85% of the villages improved their environment. So far, the impression is that, in these villages, active inflammatory trachoma has also been reduced considerably. Further analysis of the results of the impact is being conducted.

Trichiasis surgery activities are still ongoing and the setting up of trichiasis surgery camps along the lines of the cataract camps is being explored to clear the backlog.

Support to operational research has been provided for three studies, i.e.:

- (i) the Study comparing a single oral dose of azithromycin with tetracycline for treatment of trachoma;
- (ii) the validation of the trachoma rapid assessment methodology;
- (iii) the reporting on the use of the geographical information system (GIS) for management of trachoma

- ***Mali***

In Mali, SSI is a member of the National Trachoma Control Committee. It is planned that SSI will soon be involved in azithromycin distribution in the areas where it is already operating.

- **Nigeria**

A pilot study was conducted in Katsina State (a Sahelian area in the North of Nigeria) to assess the trachoma situation. The results of this study showed a prevalence of blindness of 1.5% of which 20% are trichomatous corneal opacity. The prevalence of trichiasis among females above 15 years is estimated to be 8.6% and that of TF/TI among children above 10 years is estimated to be 11.7%. SSI is seeking to develop trachoma activities in this state and to possibly identify other areas of intervention.

- **Ghana**

SSI took part in the trachoma rapid assessment activities reported in Section 3 in collaboration with the national authorities and Christoffel-Blindenmission.

### **1.3.6 Organisation pour la Prévention de la Cécité (OPC) (Dr P. Huguet)**

OPC's overall activities were presented including the planning of a series of trachoma prevalence surveys to be carried out during the course of 2000 in Chad, Guinea, Mauritania and Senegal.

## **2 Update on the Trachoma Rapid Assessment (TRA) methodology**

### **2.1 Reporting on validation of the WHO draft manual**

During the third meeting of the Alliance, a preliminary methodology for rapid assessment was circulated to all participants for comments and further field testing. This version proposed a total of seven indicators for assessing, successively, each of the SAFE components and a coding system to list, in order of priority, the communities which were investigated and for which intervention was necessary. As certain members of the follow-up committee set up to ensure the finalization of the methodology had reservations concerning this version, a number of changes were applied. For example, it was recommended that the number of indicators be reduced to three (trichiasis, active trachoma and facial cleanliness), or possibly two (trichiasis and active trachoma) instead of seven and that the manual be divided in two separate parts: one to collect disease indicators (TT & TF/TI) necessary to decision making on priority action and, another to gather information on hygiene and environmental factors associated with the disease to identify communities where intervention is indicated.

Four studies carried out in four different countries [Ghana, The Gambia, Nigeria, and China (Hainan Province (not reported))] confirmed the feasibility of the method, even when the seven indicators were taken into account. Table 1 provides information on the first three studies:

**Table 1. Reporting on validation of TRA methodology in 3 countries**

Country	Indicators	Villages	Overall impression	Validation	Comments	Miscellaneous
Ghana	3 (TT; TF/TI, Facial cleanliness)	122	Rather useful	In 21 villages by a second team  Perfect consistency in 51%  Otherwise no difference in ranking communities	Numerous difficulties (not detailed)	Useful guide to plan health education and environmental improvement strategies
Gambia	7	20	Generally satisfactory  Too long and too complicated for field workers	Yes in all selected villages, but several months later, climatic and epidemiological conditions were different  Consistency for many parameters	Estimated population?  Village infrastructure?  Suspected cases of TT?  Facial cleanliness: discussion	Numerous pertinent comments to be taken into consideration for the finalization of the manual
Nigeria	7	15	Simple  Rapid (1-2 hours/village)  Economical	Yes, parallel study (population-based prevalence study).  Agreement: 43% for TT  Agreement: 50% for TF/TI		Pertinent comments to be taken into consideration  When percentage of TF is high in all communities, other "factors" have no real interest

### 2.1.1 Experience of The Gambia

In May 1999, a trachoma rapid assessment was conducted in 20 Gambian villages using the methodology developed by WHO. A two-day training was organized beforehand for the team members to become familiar with the procedures followed by a selection of the villages to be examined.

A second assessment was undertaken a month later in 13 out of the 20 villages for comparison of the results. However, a number of different variables do not allow to make sound statistical comparisons, such as:

- Different study teams for each TRA;
- Different seasons: dry vs rainy with the consequences it implies on the environment and the availability/lack of availability of the population;
- Hypothesis of the positive effect of the distribution of tetracycline and promotion of face washing in reducing active cases prior to the second visit;
- Different selection of examination areas within large villages as carried out according to the team members interpretation of the situation.

The scores on TT surgery and primary health care are fairly consistent. However, the scores on TT prevalence varies considerably, possibly because the trichiasis patients who had already been screened and given appointments for trichiasis surgery during the first visit did not feel the need to be seen again during the second visit.

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The scores for exposure to fly breeding sites and latrines are again fairly consistent, with the exception of two villages. Scores for unclean face and TF/TI showed more variation, probably due to the same reasons as mentioned above. For details concerning the results of this TRA, please refer to Annex 3.

### **2.1.2 Experience of Ghana**

A TRA was conducted in 122 villages in UpperWest and North Regions, from May to July 1999. Out of the seven indicators proposed in the draft TRA protocol, three were selected for this study, based on the outcome of a trachoma workshop held in Accra in November 1998. The selected indicators were :

- (i) Active trachoma (TF/TI)
- (ii) Trachomatous trichiasis (TT)
- (iii) Dirty faces (DF)

Eight ophthalmic nurses from the districts of the study area, trained in trachoma grading and TRA methodology, carried out data collection. Twenty-one villages were re-sampled by supervisors to validate data collection. Criteria for selection of villages were as follows:

- Deprived socioeconomic development
- Inadequate supply of potable drinking-water
- Inaccessibility to educational and health facilities
- Distance from commercial centres
- Underdeveloped housing

Data were mapped using a Geographical Information System software.

The TRA scoring system was found consistent with available data from previous epidemiological studies. Trachomatous trichiasis was correctly screened by field workers, with only one district that was over-scored. Active trachoma was generally under-diagnosed, and would therefore require more careful training of field workers.

Data from the validation team matched exactly those of field teams in 51% of villages only; however, the relative ranking of the villages was the same, confirming the validity of the scoring system. Regional and district health authorities can now use TRA findings to establish interventions for endemic areas. The results of the study will serve as advocacy to the national authorities to develop a trachoma control programme and reduce the blindness rate in the country, thus contributing to the Global Elimination of Blinding Trachoma by the year 2020 (GET 2020). The sharing of information and experience in managing the trachoma situation in Ghana will also help improve the quality of life of millions of others in the world.

## 3 Trichiasis surgery

### 3.1 *Low-cost surgical kit*

A low-cost surgical kit to perform trichiasis surgery (bilamellar tarsal rotation and Trabut procedures) has been identified and field testing has confirmed its suitability for the task.

Two possible mechanisms for purchasing and distribution have been presented:

(i) *Centralized mechanism*

The kit will be included in the “WHO kit” catalog and therefore will be available through the WHO regional and country offices. This method should allow, in many countries, to find an agreement to waive custom duties. It will also be included in the OPC surgical kit list and other NGOs will include it in their own lists. The manufacturer, Deepak Enterprises, will also include it in its catalog.

(ii) *Independent mechanism*

The interested parties (countries/NGDOs/foundations) will contact the supplier directly and agree with him concerning the terms of purchase and shipment. Although the time required to obtain the goods will be reduced, customs duties will not be waived and clearance of the goods will be the responsibility of the interested party.

In both cases, the price remains the same as stated in document WHO/PBD/GET/98.2, i.e., #US\$100; handling and shipping costs varying according to the requests (quantities, destinations). A Trabut plate will be included in the kit..

The references of the manufacturer are as follows:

DEEPAK ENTERPRISES  
95A/1 GAUTAM NAGAR  
NEW DELHI – 110 049  
Tel. +91 11 6966097/6518108  
Fax.+91 11 6514675  
E.mail: [deepak@vsnl.com](mailto:deepak@vsnl.com)  
Web: [www.deepakenterprises.com](http://www.deepakenterprises.com)

To place an order, please refer to the WHO trichiasis surgery kit.

For further information on this matter, please contact:

[pbd@who.int](mailto:pbd@who.int) OR Dr.Agarwal at [deepak@vsnl.com](mailto:deepak@vsnl.com)

### 3.2 *Presentation of Helen Keller International’s training manual on “Community-based trichiasis surgery”*

A draft version of the above-mentioned manual was presented. The final version which will be ready shortly will be made available to all interested parties upon request.

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### **3.3 Presentation of the results of the studies on the evaluation of the quality of trichiasis surgery carried out in the southern provinces of Morocco and in the Sultanate of Oman**

#### **3.3.1 Retrospective study on the quality of trichiasis surgery in the Kingdom of Morocco**

In order to assess the quality of the results of trichiasis surgery in terms of post operative recurrences and complications, a study of the quality of trichiasis surgery was conducted in December 1998 on a sample of 750 people, randomly selected from surgical registers in 13 health centres in the provinces of Zagora and Errachidia in the Kingdom of Morocco. A recurrence was defined as an operated lid with "at least one eyelash coming into contact with the eyeball".

740 people were examined (participation rate: 98.6%). The majority of the survey population were women (63.8%) and people over 40 years of age (83.5%). Average age was 51.8 years (48.5 for women and 57.4 for men). The most frequently used surgical technique (91.2% of cases) was the bilamellar tarsal rotation. In 97.8% of cases the operation was carried out on one of the upper eyelids. The recurrence rate was estimated at 15.8%, 2.4% being severe forms involving the median part of the lid margin (therefore potentially dangerous to the function of the eye), and 13.4% concerning solely the temporal part of the eyelid, no eyelash being in contact with the cornea. 14.3% of the people who had undergone surgery still regularly removed their eyelashes. The risk factors for recurrence were people over 40 years, operations carried out in Errachidia province, and operations performed by a general practitioner. Most recurrences were within 12 months of the date of operation.

The most frequent complications were excessive rotation of the lid margin or over correction (2.3%) and cutaneous necrosis without exposure of the cornea (3.6%). In the post-operative period these complications were rarely sight-threatening. Most subjects (51.8%) had persistently watering eyes or secretions.

A total of 94.9% of the persons interviewed had received post-operative monitoring (at least one visit following the operation), while 3.1% claimed that they had never returned to the health centre after the operation. 7.7% of the people were dissatisfied with the surgical services provided claiming either incompetence or bad reception by the health centre (1%).

Traditionally national programmes of prevention of blindness set numerical targets for trichiasis surgery. The purpose of trichiasis surgery, as a primary element of the SAFE strategy is to prevent blindness from corneal complications. To ensure that trichiasis surgery actually achieves this objective, appropriate evaluation of the results should be included in surgical procedures. This will require development/modification of follow-up procedures and new data recording/reporting for assessment of monitoring and evaluation.

#### **3.3.2 Study on follow-up of trichiasis surgery in the Sultanate of Oman**

The objectives of the study were:

- (i) to evaluate the long-term results of the different trichiasis surgical procedures carried out in Oman;
- (ii) to correlate the recurrence of trichiasis for different epidemiological variables such as severity, age and, gender.

The study was conducted in eight health regions of northern and central Oman. A comprehensive sampling frame of 3100 persons was prepared for random selection from trichiasis registers. The definition of recurrence was "the presence, at the time of examination, of eyelashes touching the eyeball from an eyelid which had been operated on". A total of 603 persons with trichiasis were examined (participation: 82.7%).

The adjusted recurrence rate of trichiasis was 50.3%. Females presented a higher recurrence rate (51.4%) than males (48%), but three years after surgery females and males had an equal risk of recurrence. Persons aged 60 years and above had a higher recurrence rate (55.4%) than those aged between 40 and 60 (46%). Persons presenting "major trichiasis" (five or more eyelashes touching the eyeball) before the intervention had a higher recurrence rate (64.1%) than those presenting "minor trichiasis" (less than five eyelashes rubbing the eyeball) (45.5%).

The average follow-up period was 3.1 years and the incidence density was 16.2 persons-years.

At the time of the examination, the quality of life of patients with a recurrence was not statistically different from the quality of life of patients without recurrence. However, the level of patient's satisfaction was directly related to the incidence of recurrence of trichiasis.

## **4 Update on Geographical Information System (GIS) for trachoma control**

The WHO/Health Map team is finalizing a new software tool for health mapping. It will have a simple interface and be more user-friendly than it has been in the past. It will be tailored for possible use by programme managers at all levels of the health system. The purpose of this tool is to allow programme managers to record both epidemiological data and activity information in order to perform geographic analysis of the situation to better evaluate the needs and resources. Any development concerning this software is being carried out in collaboration with the technical units concerned, and PBD is the focal point for trachoma-related matters.

Training workshops are planned to be organized at regional level to train users. The release of the final version is scheduled to take place by the end of 2000. However, the distribution mechanism for this tool has not been discussed yet.

In The Gambia, the use of a Management Information System developed for trachoma and linked to a GIS has been reported. So far, 30 000 trachoma cases have been entered in the database. The reports and maps produced with these tools have been reported to be very useful by managers and field staff to prioritize intervention efforts and make more efficient use of resources.

## **5 Update on azithromycin**

### **5.1 Resistance**

Pfizer stressed its commitment to monitor safety and efficacy of its products and to communicate pertinent information to the health care community, including information about clinically-meaningful resistance in the trachoma mass treatment programme.

Chlamydia resistance monitoring will be considered and a study to be coordinated by Dr D. Mabey and funded by the Wellcome Trust has been designed to evaluate the effect of mass treatment on the burden of chlamydia and on resistance. *Streptococcus pneumoniae* infections should be treated with penicillin. Discussions are underway to include an additional study on azithromycin resistance in pneumococci isolated from sick children presenting to hospital in the trachoma study area. *Streptococcus pneumoniae* from invasive infections will be recovered and shipped to laboratories for molecular studies. Pfizer will communicate data in collaboration with leading scientists.



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## **5.2 Reporting of a pilot study on the use of community health volunteers for administering azithromycin in Daboya, Ghana**

Based on the previous findings that azithromycin can reduce the prevalence of trachoma, a study to test the feasibility of using community health (Guinea worm) volunteers to distribute azithromycin in Daboya (West Gonja District, Ghana) was carried out. The main objective of the study was to test the ability of community health volunteers in (i) diagnosing active trachoma, (ii) administering the correct dose of azithromycin to children and adults, (iii) keeping records of drugs received and distributed, and (iv) recognizing and referring adverse reactions. Their participation was also tested with regard to the feasibility of using azithromycin in pre-school children, the response of each household being offered azithromycin treatment and, the relationship between height and weight in individuals requiring azithromycin treatment.

The results showed that the volunteers' diagnosis of active trachoma was correct in 83% of households and that their drug management skills were good. Community response was excellent and adverse reactions infrequent. Correlation between height and weight data suggested that calculating azithromycin doses by height is a valid alternative for those taking tablets.

Overall the study demonstrated that trained community health volunteers may be able to distribute azithromycin safely and efficiently although the diagnosis of active trachoma, the recognition of adverse events, and record keeping skills were found to be areas deserving further emphasis in any future training programme.

## **5.3 Community treatment strategies with azithromycin in Kailali District, Nepal**

In this study, the cost and efficacy of two different community-wide treatment strategies were compared, i.e., mass treatment of all children between 6 months and 10 year vs targeted treatment of households with children with active trachoma.

As the prevalence of active trachoma in children is very seasonal in Nepal (in the late fall it is only 68% of the prevalence registered in the spring), mass treatment of children appears to be more effective (41% vs 31% decrease for targeted household treatment), although this difference was not statistically significant when analyzed at the level of the ward (or unit).

The results also showed that targeted treatment of households required more staff time, more antibiotic, and less villager time but that both strategies significantly reduced the prevalence of active trachoma at six months. It was decided that either may be considered appropriate depending on the constraints and the setting.

## **5.4 Study on single oral dose of azithromycin vs topical tetracycline in The Gambia**

A sample of 314 children with active trachoma (aged between six months and 10 years) were randomly selected to receive either azithromycin or tetracycline eye ointment. Disease resolution and reemergence rates at 10 weeks and six months showed that azithromycin was more effective than tetracycline (68% vs 51% at 10 weeks and 87.5% vs 73% at six months).

As azithromycin was particularly effective on intense inflammation - 80% of TI subjects were cured after six months in the azithromycin group vs 25% in the tetracycline group, the standard treatment of intense disease was changed to azithromycin.

Apart from this difference, both treatments were found to have high cure rates. However, in view of the substantial price difference between azithromycin and tetracycline, it was recommended that the change of treatment from tetracycline to azithromycin would not be cost-effective in the absence of a donation programme.

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## 5.5 Other developments

The International Trachoma Initiative announced that Ghana, Mali, Morocco, Tanzania and Viet Nam had been selected for implementation of the initial phase of its Pfizer-donated azithromycin distribution programme.

The validation of the use of height as a proxy for weight in the treatment with azithromycin of active trachoma in children was reported. The results of two studies completed in Ghana and Tanzania have demonstrated that height-based treatment is safe and cost-effective as it increases the speed at which children could be assessed and treated by up to 50%. Further research is necessary to confirm these findings and it is planned to conduct similar exercises in Mali and Viet Nam in the near future.

## 6 Environmental changes

### 6.1 Presentation of the WHO Manual on “Preventing Trachoma: a guide to environmental sanitation and improved hygiene”

This manual was presented as part of the comprehensive SAFE strategy. It addresses the F and E components of preventive action for trachoma control, which mainly focuses on improving hygiene and the environment. It also includes some additional general hygiene measures that reduce the risk of transmission of other infectious diseases.

This manual is intended for communities where trachoma has been shown to represent a public health problem, which are mainly poorer rural or peri-urban communities. It is designed for use by community health workers, community leaders, nongovernmental organizations and other local individuals who wish to plan an active role in the community in order to improve environmental sanitation. It may also be useful for decision-makers in support of hygiene education or the improvement of water supply and sanitation.

Simple methodologies for trachoma assessment, community participation in control activities, excreta disposal, hygiene education, vector control, health promotion in schools, improved food safety and other measures that promote a better environment are described in this manual.

### 6.2 Reporting of ongoing operational research carried out in The Gambia

Based on the results of a study incriminating *M. sorbens* as the principal vector of trachoma in The Gambia, a large scale cluster-randomized trial was undertaken between the Medical Research Council Laboratories, the Department of Biological Sciences of Durham University, the London School of Hygiene and Tropical Medicine, the Gambia National Eye Care Programme and the Gambian Department for Community Development. The aims of the study were :

- to prove that eye-seeking flies are mechanical vectors of trachoma;
- to quantify the relative contribution of eye-seeking flies in the transmission of trachoma;
- to test that the provision of simple latrines as an intervention against flies can reduce the transmission of trachoma as it is known that *M. sorbens* breeds almost exclusively in exposed human faeces and not in latrines.

Fly control is already underway by the application of Ultra-Low volume of insecticide and pit latrines are being constructed. Clinical surveys are being conducted at 0 and 6 months supported by photographs and microbiology, making routine entomological collections, monitoring of the use of latrines, observations on faeces disposal practices. Further work on the behavioural ecology of *M. Sorbens* is also ongoing with mark-release-recapture experiments to assess the

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range of movement of individual flies, the identification of preferred breeding sites and the response of flies to face-washed children.

It is hoped that the findings of this research will be applicable in other situations and that the project will prove training opportunities for other national programmes that wish to start research on environmental changes for trachoma control.

### **6.3 *Field experience of fly control in Kenya***

The preliminary findings of a five-month pilot study (June – October 1999) on the effect of fly control using sustainable interventions on the prevalence of trachoma in Maasai pastoralists in southern Kenya were presented.

A low-cost, home-made fly trap constructed with recycled plastic bottles was presented as being a potential effective method for reducing flies. Different types of bait were also tested to see which best attracted the flies in the traps. In order to be selected, the bait had to be readily available, free of charge, sufficient in supply, strong enough to attract flies in homesteads with other fly food available. The most successful fly bait was found to be early morning infant urine and early morning child faeces.

Six bottle fly traps were distributed in 226 homesteads separated by an average distance of six miles from each other and filled with the appropriate bait. It was reported that five months after the study started, fly density had decreased by 42% compared to baseline, and that new cases of trachoma had fallen by 36.2% within the entire studied population compared to control homesteads, and by 34.3% in three months in children.

Further research is planned to be conducted to verify these findings and should be reported at the next Alliance meeting.

## **7 Monitoring and evaluation of elimination of blinding trachoma**

### **7.1 *Reporting of a workshop organized by the International Trachoma Initiative on the economics of trachoma and its control***

A succinct report from a workshop held by ITI on the economics of trachoma and its control was presented. The purpose of this workshop was to explore a number of questions related to the economics of trachoma and its control. The necessity to gather further evidence about the cost-effectiveness of the WHO-recommended SAFE strategy was pointed out as this may influence multilateral, governmental and nongovernmental organizations, individuals, families and communities to take on trachoma control interventions. While further research to generate more precise data is ongoing, a review of the existing literature was recommended to assist in the development of preliminary estimates related to (i) financing of the global trachoma elimination agenda, (ii) defining social and economic cost of the disease, and (iii) developing a model of the cost effectiveness and its control.

### **7.2 *Update on operational research on cost-effectiveness analyses and evaluations for national programmes***

Operational research is underway in a number of countries, i.e., Tanzania, Morocco, Nepal Gambia, Egypt, Mali and Ghana with the aim to provide data on programme activities which will be analysed and used to maximize the effectiveness of trachoma control programmes. The main issues of this research concern (i) the identification of populations in communities at high risk for blinding trachoma, (ii) the implementation of the SAFE strategy in these communities, and (iii) the monitoring of the impact of trachoma programmes in the short term and long term. Two major operational

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research issues which will be undertaken through collaboration between the Ministry of Health, the Dana Center for Preventive Ophthalmology and the Department of Health Policy and Management of Johns Hopkins School of Public Health were presented. They concern cost effectiveness analyses of alternative approaches to azithromycin distribution in communities and, the development of an evaluation strategy for the national trachoma control programme in Tanzania.

A study comparing two treatment strategies – recruitment-led with village government representatives vs recruitment led with community volunteers - has demonstrated the feasibility of collecting detailed data that can be used to assess the costs for the government and the opportunity costs for the villagers that accompany the various forms of intervention for administering azithromycin in the A component of the SAFE strategy.

The framework of an evaluation strategy for a national trachoma control programme and the implementation of that framework in the context of the Tanzanian trachoma control programme was presented. Monitoring indicators for each component of the SAFE strategy have been defined to chart the progress towards implementation as well as outcome indicators (short-term, medium-term and long-term) to determine the impact on trachoma of the progress made (see Tables 1 & 2 below). It is hoped that the data collected will provide critical feedback to the programme implementation team, allowing them to alter strategies or change approaches if necessary. Most importantly, information on the short and long-term effects on trachoma will be available to the funding agencies to enable them to plan for future needs, both in Tanzania and in other countries.

**Table 1. Primary process indicators for each component of the SAFE strategy**

Goal	Objective	Process indicator
<b>SURGERY</b>		
Train sufficient surgeons for target area	1. Recruit and train nurse surgeons 2. Re-train existing staff	1. Number of surgeons/ 100,000 2. Number of operations/ surgeon/year
Improve access to surgery	1. All targeted communities have at least 1 village based surgical session/year.	1. Number of village surgeries/ total number of surgeries/ surgeon/year 2. Number of surgeries/ estimated cases in population/ year 3. Number sessions /village/year
Improve acceptability	1. 75% of those recommended for surgery, based on village estimates or village TT inventory, receive surgery.	1. Number of surgeries/number referred for surgery/year.*
<b>ANTIBIOTIC DISTRIBUTION</b>		
High Access	1. All target villages have access to one treatment campaign/year	1. Villages with treatment campaign/number of target villages/year 2. Number of children treated age 1-7/number of children 1-7/district 3. Number of women treated/number of women/district
High acceptability	1. Within villages, 75% of target population is treated	1. % of estimated population treated/village/year*
Correct drug management	1. Unaccounted doses of azithromycin do not exceed .01% 2. Azithromycin stored in temperatures below 31 degrees	1. Number of bottle/tablets shipped=number stored in all district offices 2. Number in district office+ number dispensed in treatment programme=total number shipped 3. Drug dispensed=drug recorded on treatment records
<b>FACIAL CLEANLINESS AND HYGIENE MEASURES</b>		
Improve facial cleanliness	1. Increase media and local coverage of importance of face and hand washing in children 2. Use of local appropriate information forums to convey message 3. Identify obstacles to implementation and work with families to overcome 4. 1/3 reduction in percent of unclean faces in children	1. % of children age 0-5 with clean faces/ village*
Decrease fly breeding sites	1. Increase media and local coverage of importance of latrine building, use and covers, and garbage disposal 2. Use of local appropriate information forums to convey message 3. Identify obstacles to implementation and work with families to overcome 4. 75% of households with covered latrines in the village, and 75% with no garbage/fly breeding sites within 50 meters of house.	1. Number of houses with covered latrine/number of houses/village 2. Number of houses with latrine/number of houses/ village 3. Number of houses free of garbage, cow dung/number of houses.

*\*In general, the programme organizers felt that evaluating improvement in acceptability must wait until village-based surgeries have been in place for at least a year.*

**Table 2. Outcome indicators: Reduction in active trachoma, trichiasis, and visual loss**

Outcome	Short Term (1-2yrs)	Medium Term (2-5yrs)	Long Term (>5 yrs)
Reduction in TF/TI	1. Rate of TI in ages 0-7 is ½ * 2. Rate of infection in children is 1/4	1. Rate of TI is <0.1% 2. Rate of TF is ½ in ages 0-7.	1. Sustained TI <0.1% 2. Rate of TF is 5% in ages 0-7
Reduction in TT	Number of TT cases are halved*	<1% with any lashes touching cornea	(at 10 years: no incident TT)
Reduction in visual	-	-	Visual loss due to

loss			trachoma is <5%
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## 8 Update on operations research projects

### 8.1 *The Gambia's projects (cohort studies and community trials on trichiasis surgery and azithromycin treatment)*

The results of five operational research studies carried out in The Gambia in collaboration between the National Eye Care Programme and the International Centre for Eye Health, London were presented to the Alliance.

#### 8.1.1 Longitudinal study of trichiasis in The Gambia

Poor attendance for surgery has been reported to be a problem in The Gambia. A longitudinal study of minor and major trichiasis in The Gambia has been conducted to investigate cultural attitudes to trichiasis and its treatment, factors determining surgical uptake and factors determining progression of disease in patients not undergoing surgery.

The results showed that surgical attendance rate was 23% over the year. Significant predictors of attendance were multiple income source for compound head, symptoms impeding work and previous ignorance about surgery as a barrier. Lack of time was also a significant predictor of non-attendance. Progression rate from minor to major trichiasis was 33% person/year and the incidence of corneal opacity was 25%. Clinically active trachoma on at least one examination visit and bacterial culture positive conjunctival swab on at least one occasion were significant predictors of progression of corneal scarring. Surgical success rate was 72%. Surgery had no significant effect on progressive corneal scarring or visual change over one year. 78% of working surgical patients took at least 3 months off work after surgery.

It was recommended that methods for reducing the patient time commitment involved in surgery be investigated as well as alternative means of cost recovery and antibiotic treatment for trichiasis patients. Surgery for minor trichiasis may be indicated.

#### 8.1.2 Community randomized trial of village vs health-centre based surgery in The Gambia

As mentioned earlier, uptake of lid surgery in The Gambia is poor despite the efforts made to improve. As a result a community randomized trial of village vs health-centre-based surgery has been conducted to further analyse the causes and propose solutions. The results indicated that the uptake of surgery performed in villages is much higher than in the health centres (66% vs 44%) which equates to an improvement of 45% on the average acceptance rates of 44% in the health-centre based group. The reasons for this effect which are being incriminated to financial and time costs to patients as well as reduction of fear are being further investigated.

#### 8.1.3 Longitudinal study on 12-year natural history of trachomatous scarring in The Gambia

The purpose of this study was to show the link between trichiasis and future corneal opacity in order to provide the rationale for performing lid rotation surgery on patients with trichiasis who do not yet have corneal opacity.

Subjects identified with trachomatous scarring during the 1986 blindness national survey were traced for re-examination 12 years later and administered a short questionnaire on risk factors for disease progression. Twelve-year incidence figures were calculated and logistic regression models used to test the significance of potential risk factors for progression of the disease.

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326 of 639 (51%) subjects were traced and examined, 108 (17%) had died and 202 (32%) were lost to follow up. The 12 year incidence for trichiasis was 6.4% (95%CI 4.0 – 9.97), for corneal opacity 5.96% (95%CI 3.67 – 9.42), for visual impairment / blindness 16.51% (95%CI 12.71 - 21.13) and for corneal visual impairment / blindness 2.5% (95%CI 1.2 – 5.0). Mandinka ethnicity was a risk factor (OR 4.32 95%CI 1.29-14.4) for incidence of trichiasis, and trichiasis at baseline was a risk factor (OR 8.42 95%CI 1.81-39.16) for incidence of corneal opacity and for corneal visual impairment / blindness at follow up (RR7.3 95%CI 2.5-21.6). History of lid surgery for trichiasis was associated with corneal opacity (RR2.6 95%CI 1.2-5.6) at follow up. Older age was a significant risk factor (OR 1.07; 95%CI 1.01-1.12) for development of trichiasis, corneal opacity and visual loss. Baseline trichiasis, corneal opacity and visual impairment / blindness were not associated with excess mortality. In subjects not thought to have any sight threatening complications from trachoma, the incidence of visual impairment/blindness was 1.5% (95% CI 0.2-5.4) in those under 38 years old and 26.5% (95%CI 19.2 - 35.6) in those over 38 years old.

This is the first study to demonstrate the link between trichiasis and future corneal opacity. It provides the rationale for performing lid rotation surgery on patients with trichiasis who do not yet have corneal opacity. Such surgery has previously been shown to prevent visual deterioration and this study demonstrated a trend towards prevention of future development of corneal scarring. The association between follow up corneal opacity and previous surgery among trichiasis patients suggests late presentation as a problem. The eye care programme needs to encourage early presentation for surgery. The planning of surgical services will be aided by the incidence figures generated by this study. The risk factors associated with incidence of trichiasis remain poorly understood and further investigation is required.

#### **8.1.4 Study on long-term follow-up of lid surgery for trichiasis in The Gambia: surgical results and patient satisfaction**

The purpose of this study was to investigate recurrence of trichiasis and patient satisfaction in a sample of people who had undergone lid surgery in The Gambia. Sixty-five consenting patients identified from health centre surgical records and community screening were examined and administered questionnaires (mean follow-up was 10 years). The results showed that 45% of operated eyes were free of trichiasis at follow-up and that 35% of patients had not suffered recurrent trichiasis in an operated eye. Recurrent trichiasis was reported to be more common in patients operated on in the main hospital, an excess failure which may be explained by more severe cases, less experienced surgeons in training and, late presentation. Mean overall survival time was estimated to be 11.40 years.

The majority of the patients reported satisfaction with surgery (88%), less discomfort (93%), improved vision (83%), and 38% reported that work was easier since surgery. More than 90% found that surgery was worth the expenditure and would recommend it to others. However, 26% of patients reported experiencing pain during and after surgery.

#### **8.1.5 Comparison of single oral dose of azithromycin with tetracycline eye ointment** (Already reported under section 5.4)

### **8.2 Other projects**

#### **8.2.1 Project on trachoma and social justice**

The rationale of a project on trachoma and social justice to be undertaken by the Harvard School of Public Health was presented. The aim of this project is to assist in understanding trachoma from a social justice lens and provide strategies for addressing dimensions of social justice as part of the SAFE strategy activities. A position paper entitled “Applying the Social Justice Lens to Trachoma Control Programming” will be published and distributed at the next Alliance meeting and working

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papers will be submitted to relevant academic journals as a way of widening the “audience” for trachoma and its control. A detailed research agenda will be prepared as the final output of this project.

### **8.2.2 Strategies for the control of Blinding trachoma**

A proposal has been submitted to the Wellcome Trust by applicants from the London School of Hygiene and Tropical Medicine (London), the Dana Center, (Baltimore), The Gambia Eye Care Programme, the Tumaini University (Moshi, Tanzania), the International Centre for Eye Health (London, UK) and the Laboratory Centre for Disease Control (Winnipeg, Canada) to carry out further research studies in Tanzania and in The Gambia. The aim of the study is to provide the evidence base for policies leading to successful trachoma control programmes. The study will use quantitative PCR to determine the load of ocular chlamydial infection in populations with different levels of endemicity.

## **9 Future of the Alliance in the context of Vision 2020**

The WHO office for the Prevention of Blindness and Deafness announced the recent launch of a Global Initiative for the Elimination of Blindness referred to as “*Vision 2020 – The Right to Sight*” . The goal of this initiative is the elimination of avoidable blindness worldwide by the year 2020. This initiative is by a broad network of partners composed of ministries of health, eye-care personnel, development organizations, research institutions, and corporate eye-care service providers. The elimination of blindness from trachoma is among the priority actions planned under the disease control component of Vision 2020.

More information on this initiative is available on the WHO Prevention of Blindness web site at the following address: [www.who.int/pbd/index.htm](http://www.who.int/pbd/index.htm).



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**FOURTH MEETING OF THE WHO ALLIANCE FOR THE  
GLOBAL ELIMINATION OF TRACHOMA**

*Geneva, Switzerland (1 & 2 December 1999)*

## **Conclusions and Recommendations**

### **1. National Country Programmes**

The Alliance acknowledges the development of national trachoma control activities in more than 25 countries, 18 of which were represented at this meeting. This exceeds the target for country involvement set during the Global Scientific meeting held in June 1996. Each country is encouraged to develop national plans in partnership with interested organisations, integrating all elements of the SAFE strategy. Successful programme implementation will involve intersectoral cooperation and community participation to ensure inclusion of appropriate behavioural and environmental programmes.

### **2. South-to-South Cooperation**

Several countries expressed appreciation for cooperation and coordination with countries in their region. The group recommends that such initiatives including regional working groups be encouraged and financially supported by funding agencies.

### **3. Rapid Assessment**

The Alliance received with appreciation the reports of field evaluation of the trachoma rapid assessment (TRA) methodology. The working group on TRA will make a final version available within four months. This manual should be widely disseminated for use by all interested countries and organizations.

### **4. Reporting System**

The need for improved and uniform reporting from national trachoma control programmes was recognized by the Alliance. It was recommended to set up a small working group within the Alliance to put together existing reporting systems, analyse the experience gained and propose before the next Alliance meeting a uniform reporting system for all interested parties.

### **5. Operations Research/Technical Scientific Meeting**

Reports were presented on several elements of operations research including trichiasis surgery, antibiotic distribution and environmental interventions. The Alliance recognizes the need for additional operations research in all areas. Further, the Alliance recommends the convening of (a) technical scientific meeting(s) within the next year to discuss key elements of the trachoma control programmes.

## **6. Trichiasis Surgery Kits**

It was reported to the Group that the cost and availability of the trichiasis surgery kit have been an obstacle to the implementation of trichiasis surgery activities in some countries. Finalization of agreements with manufacturers complying with presented prerequisites is recommended to make the kit available in time through the WHO Procurement Services and/or through direct purchase from identified manufacturers.

## **7. ITI development**

The Alliance notes with appreciation the initiation in five selected countries of the large-scale donation of azithromycin by Pfizer Inc., supported through the International Trachoma Initiative.

The participants urged that this initiative be expanded as fast as possible to bring maximum benefit to affected populations.

## **8. Antibiotics**

The high-volume need, the cost and the lack of availability of tetracycline ointment in endemic countries remain major constraints. The Group recommends that investigation be undertaken to explore the feasibility and economics of importing or establishing production of tetracycline ointment in at least one (or more) endemic country(ies) in Africa.

## **9. Educational and programme materials**

Considerable progress has been made in the development of educational and programme materials. These should be produced and disseminated for use by all interested countries and organizations.

## **10. Vision 2020 – The Right to Sight**

The Alliance took note of the recent launch of “*Vision 2020 – The Right to Sight*” as a global initiative for the elimination of avoidable blindness. The Alliance applauded the inclusion of trachoma control amongst the priorities of this initiative and expressed its full support and pledge to continue its strategic and technical developments to contribute to, and facilitate, effective trachoma control.

**FOURTH MEETING OF THE WHO ALLIANCE FOR THE  
GLOBAL ELIMINATION OF TRACHOMA**

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**DRAFT AGENDA**

Opening ceremony  
Introduction of participants  
Election of officers  
Administrative announcements  
Adoption of agenda

1. Reporting of activities undertaken since the previous meeting
  - WHO secretariat
  - Endemic countries (as present)
  - Participating organizations of the Alliance
2. Update on the Trachoma Rapid Assessment Methodology
  - Reporting on validation of the WHO draft manual
  - Discussion
3. Trichiasis surgery
  - Discussion on possible purchasing/distribution mechanisms of the low-cost surgical kit
  - Presentation of Helen Keller International's training manual on "*Community-based trichiasis surgery*"
  - Presentation of the results of the studies on the evaluation of the quality of trichiasis surgery carried out in the southern provinces of Morocco and in the Sultanate of Oman
  - Discussion
4. Update on Geographical Information System (GIS) for trachoma control
  - Experience of Morocco
    - Limitations and constraints
    - Suggestions for a simplified application
  - Experience of the Gambia
  - New developments (including data management)
  - Discussion

5. Update on azithromycin

- Resistance
- Distribution mechanisms of Pfizer-donated Zithromax through ITI
- Reporting of a pilot study on the use of community health volunteers for administering azithromycin in Daboya, Ghana
- Community treatment strategies with azithromycin in Kailali District, Nepal
- Other developments

6. Environmental changes

- Presentation of the WHO manual on "*Preventing Trachoma: a guide to environmental sanitation and improved hygiene*"
- Reporting of ongoing operational research carried out in the Gambia
- Field experience of fly control in Kenya

7. Monitoring and evaluation of elimination of blinding trachoma

- Presentations
- Discussion

8. Update on operations research projects

- The Gambia's projects (cohort studies and community trials on trichiasis surgery and azithromycin treatment)
- Any other projects
- Discussion

9. Future of the Alliance in the context of *Vision 2020*

10. Development of work plan for the coming year

11. Any other matters

Conclusions and recommendations

Date and place of next meeting

Closure of meeting



**FOURTH MEETING OF THE WHO ALLIANCE FOR THE  
GLOBAL ELIMINATION OF TRACHOMA**

***Geneva, Switzerland (1 & 2 December 1999)***

**FINAL LIST OF PARTICIPANTS**

**NATIONAL COORDINATORS**

**Dr Liknaw ADAMU**, Team Leader, Prevention of Blindness Team, Ministry of Health, P.O. Box 1234, Addis Ababa, **Ethiopia** (Fax. MOH 251 1 519 366 - Tel. - E.mail: [cbm.roe2@ttelecom.net.et](mailto:cbm.roe2@ttelecom.net.et))

**Professeur Sidi Ely AHMEDOU**, Coordonnateur, Programme national de Lutte contre la Cécité, Direction de la Protection Sanitaire, Ministère de la Santé et des Affaires Sociales, c/o Service d'Ophtalmologie, Hôpital Militaire de Nouakchott, B.P. 78, Nouakchott, **Mauritania** (Tel. & Fax +222 2 915 79)

**Dr ABDOU AMZA**, Coordinateur adjoint, Programme national de Prévention de la Cécité, Ministère de la Santé, B.P. 11347, Niamey, **Niger** (Fax +227 75 33 13 - Tel. +227 73 71 61)

**Dr Maria HAGAN**, National Coordinator, Eye Care/Prevention of Blindness, Eye Care Secretariat, Ministry of Health, P.O. Box M. 44, Accra, **Ghana**  
(Fax. 233 21 666 850 / Tel. +233 21 666 815 / E.mail [eyecare@africaonline.com](mailto:eyecare@africaonline.com))

**Professor Dehbia HARTANI**, Chef de Service, Ophtalmologie, CHU Alger Centre, Hôpital Mustapha, Alger (Ministère de la Santé, Rue Md. Alliat No. 12, Lot Bensmaïa Kouba, Alger) **Algeria**  
(Fax. + 213 2 65 61 29, 67 23 42 or 267 04 80 or 266 75 50 - Tel. +213 2 66 39 86)

**Dr Abdul HUSSEIN JUMA AL LAWATI**, Ophthalmologist, Ophthalmology Department, Al Nhadha Hospital (P.O. Box 937, P.C. 112 Ruwi), Representative of the Directorate General of Health Affairs, Ministry of Health, P.O. Box 393, Muscat , 113, **Sultanate of Oman**  
(Fax 968 773 75 22 /Tel 968 773 6142 c/o Al Nhadha Hospital)  
(Fax 968 750 562 / E.mail:[alijamoh@omantel.net.om](mailto:alijamoh@omantel.net.om) of Directorate General of Health Affairs)

**Dr Lazare ILBOUDO**, Coordonnateur du Programme national de Lutte contre la Cécité, Centre national de Lutte contre la Cécité, 05 BP 6053, Ouagadougou 05, **Burkina Faso**  
(Fax & Tel +226 30 78 21 - Tel 226 32 46 86 - E.mail: [ilboudo@sante.gov.bf](mailto:ilboudo@sante.gov.bf))

**Dr Jefitha KARIMURIO**, Lecturer/Coordinator, Kenya Ophthalmic Programme, Ministry of Health/KSB, Barclay House, Off Langata Road, P.O. Box 46656, Nairobi , **Kenya**  
(Fax. +254 2 501 733 - Tel. +254 2 601 536 - E.mail: [ksblind@africaonline.co.ke](mailto:ksblind@africaonline.co.ke))

**Dr Simon KATENGA**, National Eye Care and Onchocerciasis Control Coordinator, Ministry of Health, P.O. Box 9083, Dar es Salaam, **Tanzania**  
(Fax. +255 51 130 009 - Tel. +255 51 130 025 - E.mail: [Katenga@twiga.com](mailto:Katenga@twiga.com) & [katenga@raha.com](mailto:katenga@raha.com))

**Dr Mahamat MADANI**, Coordinateur national du Programme de Prévention, Programme national de Lutte contre la Cécité, Ministère de la Santé publique du Tchad, B.P. 221, Ndjamena , **Chad**  
(Fax.& Tel. 235 52 29 41 or 235 51 40 53)

**Dr Doulaye SACKO**, Coordonnateur du Programme national de Lutte contre la Cécité, Division de l'Epidémiologie, Direction nationale de la Santé publique, Ministère de la Santé, des Personnes Agées et de la Solidarité, B.P. 228, Bamako, **Mali**  
(Fax +223 23 17 21 - Tel +223 23 89 30 /+22322 64 97 - Email: [pnlc@datatech.toolnet.org](mailto:pnlc@datatech.toolnet.org))

**Dr Mamadou B. SALL**, Coordonnateur du Programme national de Lutte contre la Cécité, Service National des Grandes Endémies, Direction de l'Hygiène et de la Santé Publique, Ministère de la Santé et de l'Action Sociale, B. P. 3817, Dakar, **Senegal**  
(Fax +221 8 27 77 501 - Tel. + 221 8 32 20 48)

**Mr Ansumana F. S. SILLAH**, National Eye Care Programme Manager, Department of State for Health, Social Welfare & Women's Affairs, Eye Unit, Royal Victoria Hospital, P.O. Box 950, Banjul, **The Gambia**  
(Fax +220 222 463 or 496 203 / Tel. + 220 497 049 / E.mail: [eyecare.dos@gamtel.gm](mailto:eyecare.dos@gamtel.gm))

**Professor Ton Thi KIM THANH**, Director, National Institute of Ophthalmology, 85 Ba Trieu Street, Hanoi, Viet Nam (Tel. 84 4 825 2004 / Fax. 84 4 825 2004 / E.mail: [tonthi.kimthanh@hn.vnn.vn](mailto:tonthi.kimthanh@hn.vnn.vn))

**Dr Vithoune VISONNAVONG**, Coordonnateur national pour la Lutte contre la Cécité et Directeur du Centre d'Ophthalmologie, Ministère de la Santé publique, Vientiane, **Lao People's Democratic Republic**  
(Tel. 856 21 61 69 25 / Fax. 856 21 61 69 25 & 856 21 61 20 79 / E.mail: [oph@moh.gov.la](mailto:oph@moh.gov.la))

**Dr Uch YUTHO**, National Prevention of Blindness Coordinator, National Subcommittee for the Prevention of Blindness, Ministry of Health, Ang Duong Hospital, P.O. Box 2027, Phnom Penh, **Cambodia**  
(Tel. 855 23 211 072 / Fax. 855 15 920 913 / E.mail: [campbl@bigpond.com.kh](mailto:campbl@bigpond.com.kh) & [yutho@hotmail.com](mailto:yutho@hotmail.com))

#### REPRESENTATIVES OF NONGOVERNMENTAL ORGANIZATIONS AND FOUNDATIONS REPRÉSENTANTS D'ORGANISATIONS NON GOUVERNEMENTALES ET DE FONDATIONS

**Dr Joseph A. Cook**, Executive Director, International Trachoma Initiative, 6 East 45<sup>th</sup> Street, Suite 1600, New York, NY 10017, USA  
(Fax. +1 212 490 6461 - Tel. +1 212 490 6460 - E.mail: [jcook@trachoma.org](mailto:jcook@trachoma.org) & [iti@trachoma.org](mailto:iti@trachoma.org))

**Dr Gamal Ezz EL ARAB**, Representative of Al-Noor Foundation, c/o Al-Noor Foundation, No.15, St. 8, Area 4, Sheraton Heliopolis Building, P. No. 11361, Cairo, Egypt  
(Fax 202 578 1264 - Tel. +202 266 7462 – E.mail [gamal@soficom.com.eg](mailto:gamal@soficom.com.eg))

**Dr Hannah FAAL**, President, International Agency for the Prevention of Blindness, c/o Department of State for Health, Social Welfare & Women's Affairs, Eye Unit, Royal Victoria Hospital, P.O. Box 950, Banjul, The Gambia  
(Fax +220 49 62 03 - Tel. + 220 497 049 – E.mail: [ssi@gamtel.gm](mailto:ssi@gamtel.gm) or [hbf@gamtel.gm](mailto:hbf@gamtel.gm))

**Mr Alfred Gugler**, Programme Coordinator for China/Tibet and Bolivia, International Cooperation, Swiss Red Cross, Rainmattstr. 10, 3001 Bern, Switzerland  
(Fax. 41 31 387 73 73 - Tel. 41 31 387 71 11)

**Ms Dyanne M. HAYES**, Vice President - Programs, Conrad N. Hilton Foundation, Suite 740, 10100 Santa Monica Boulevard, Los Angeles California, 90067-4011, USA  
(Fax.+1 310 556 2301 - Tel. +1 310 556 4694 - E.mail: [dyanne@hiltonfoundation.org](mailto:dyanne@hiltonfoundation.org))

**Dr Don R. HOPKINS**, Associate Executive Director, Control and Eradication of Diseases, The Carter Center, One Copenhill, 453 Freedom Parkway, Atlanta, GA 30307, USA  
(Fax. +1 404 874 5509 - Tel. +1 404 420 3837 - E.mail: [sdsulli@emory.edu](mailto:sdsulli@emory.edu))

**Dr Pierre HUGUET**, Médecin Inspecteur de Santé publique, Consultant pour l'Organisation pour la Prévention de la Cécité (OPC), 9 rue Mathurin Régnier, 75015 Paris, France  
(OPC: Fax +33 1 40 61 01 99 – Tel +33 1 40 61 99 05 – E.mail: [opcecite@pratique.fr](mailto:opcecite@pratique.fr)  
Private: Fax. +33 2 32 18 31 48 – Tel. +33 2 35 62 53 18 – E.mail: [huguetp@compuserve.com](mailto:huguetp@compuserve.com))

**Mr Josef Kasper**, Programme Coordinator for West Africa, International Cooperation, Swiss Red Cross, Rainmattstr. 10, 3001 Bern, Switzerland  
(Fax. 41 31 387 73 73 - Tel. 41 31 387 71 11)

---

**Mr Martin KYNDT**, Deputy Overseas Director, Sight Savers International, Grosvenor Hall, Bolnore Road, Haywards Heath, West Sussex RH16 4BX, United Kingdom  
(Fax +44 1444 446 688 - Tel +44 1444 446 600. E.mail [MKyndt@sightsaversint.org.uk](mailto:MKyndt@sightsaversint.org.uk))

**Dr Peter KILIMA**, Regional Representative, , International Trachoma Initiative (ITI), P. O. Box 3545, Dar es Salaam, Tanzania (Fax. +255 51 122350 - Tel. +255 51 122350 - E.mail: [kilima.iti@twiga.com](mailto:kilima.iti@twiga.com))

**Professor Volker KLAUSS**, Medical Consultant to Christoffel Blindenmission, Professor of Ophthalmology, University of Munich, Eye Hospital Munich, Mathildenstr. 8, 80336 Munich, Germany  
(Fax +49 89 5160 4942 - Tel + 49 89 5160 3824 – E.mail: [vklauss@ak-i.med.uni-muenchen.de](mailto:vklauss@ak-i.med.uni-muenchen.de))

**Ms Kirsten LAURSEN**, Director, Training and Community Education, Helen Keller Worldwide, 90 West Street, New York, NY 10006, USA  
(Fax +1 212 766 7590 - Tel. +1 212 791 5266 - E-mail: [klaursen@hki.org](mailto:klaursen@hki.org))

**Mr Jeffrey MECASKEY**, Director, International Trachoma Initiative, 6 East 45th Street, Suite 1600, New York, NY 10017, USA  
(Fax. +1 212 490 6461 - Tel. +1 212 490 6460 - E.mail: [mecaskey@trachoma.org](mailto:mecaskey@trachoma.org) & [iti@trachoma.org](mailto:iti@trachoma.org))

**Dr Louis PIZZARELLO**, Medical Director, Helen Keller Worldwide, 90 West Street, New York, NY 10006, USA  
(Fax +1 212 766 7590 - Tel. +1 212 791 5266 – Private fax: +1 516 325 1074 –  
E.mail: [bythebay@hamptons.com](mailto:bythebay@hamptons.com))

**Mr Richard PORTER**, Executive Director, Sight Savers International, Grosvenor Hall, Bolnore Road, Haywards Heath, West Sussex RH16 4BX, United Kingdom  
(Fax +44 1444 44 66 88 - Tel. + 44 1444 44 66 00 – E.mail: [rporter@sightsaversint.org.uk](mailto:rporter@sightsaversint.org.uk))

**Professeur Patrick QUEGUINER**, Medical Director, Organisation pour la Prévention de la Cécité (OPC), c/o IMISSA, Le Pharo, B.P. 13998 Marseille Armées, France  
(OPC: Fax +33 1 40 61 99 49 - Tel. +33 1 40 61 99 05 - E.mail: [opcecite@pratique.fr](mailto:opcecite@pratique.fr)  
MISSA: Fax. +33 4 91 59 46 72 – Tel. +33 4 91 15 01 01)

**Mrs Jessica ROSE**, Program Associate, International Trachoma Initiative, 6 East 45<sup>th</sup> Street, Suite 1600, New York, NY 10017, USA  
(Fax. +212 490 6461 – Tel. +212 490 6460 – E.mail: [jrose@trachoma.org](mailto:jrose@trachoma.org))

**Mr Dan SALTER**, Country Director, International Development Enterprises (IDE), 1B 3b Giang Vo, Duong Kim Ma, Ba Dinh, Hanoi , Viet Nam  
(Fax. +84 4 846 3206 - Tel. +84 4 846 3186 - E.mail: [ide@netnam.org.vn](mailto:ide@netnam.org.vn))

**Dr Larry SCHWAB**, Chair, Committee on International Ophthalmology, Medical Director, International Eye Foundation, 3333 Collins Ferry Road, Morgantown, WV 26505, USA (Fax +1 304 599 7346 -  
(Tel +1 304 598 3301 (work) & +1 304 598 0241 (home) – E.mail: [schwabwv@earthlink.net](mailto:schwabwv@earthlink.net))

**Ms Victoria SHEFFIELD**, Executive Director, International Eye Foundation, 7801 Norfolk Avenue, Bethesda, Maryland 20814, USA  
(Fax +1 301 986 1876 - Tel +1 301 986 1830 – E.mail: [vsheffield@iefusa.org](mailto:vsheffield@iefusa.org))

**Mr Dan SPICER**, Director of Special Projects, Member of the Board of Directors, International Development Enterprises, Cherry Creek Plaza II, 650 South Cherry Street, Suite 1400, Penthouse, Denver, Colorado 80246, USA  
(Fax. +1 (303) 322 2600 - Tel. +1 303 333 0005 - E.mail: [DES1400@aol.com](mailto:DES1400@aol.com))

**Ms Pina TAORMINA**, Executive Director, Orbis International, Inc., 330 West 42nd Street, Suite 1900, New York, NY 10036, USA  
(Fax. +1 212 244 2744 - Tel +1 212 244 2525 – E.mail: [adam@nt.orbis.org](mailto:adam@nt.orbis.org))

**Ms Lisa TAPERT**, Director, Trachoma Program, Helen Keller Worldwide, 90 West Street, New York, NY 10006, USA

(Fax +1 212 766 7590 - Tel. +1 212 791 5266 & 822 E.mail: [ltapert@hki.org](mailto:ltapert@hki.org))

**Dr André Walser**, Ophthalmologist and Adviser to the Swiss Red Cross, Swiss Red Cross, Rainmattstr. 10, 3001 Bern, Switzerland

(Fax. 41 31 387 73 73 - Tel. 41 31 387 71 11)

**Dr James ZINGESER**, Senior Epidemiologist, Global 2000, The Carter Centre, One Copenhill, 453 Freedom Parkway, Atlanta, GA 30307, USA

(Fax 404 874 5515 - Tel. 404 420 3854 – E.mail: [jzingeses@emory.edu](mailto:jzingeses@emory.edu))

**REPRESENTATIVES OF WHO COLLABORATING CENTRES FOR THE PREVENTION OF BLINDNESS  
& OTHER RESEARCH INSTITUTIONS**

**REPRÉSENTANTS DE CENTRES COLLABORATEURS OMS POUR LA PRÉVENTION DE LA CÉCITÉ  
& AUTRES INSTITUTS DE RECHERCHE**

**Dr Alain AUZEMERY**, Directeur, Institut d'Ophthalmologie tropicale de l'Afrique (IOTA), B.P. 248, Bamako, Mali  
(Fax +223 225 186 - Tel +223 223 421 - E.mail: [a.auzemery@malinet.ml/iota@malinet.ml](mailto:a.auzemery@malinet.ml/iota@malinet.ml))

**Dr Robin BAILEY**, Clinical Scientist, Medical Research Council Laboratories, Fajara, P.O. Box 273, Banjul, Gambia (Fax. +220 496 513 - Tel. +220 495 442 - E.mail: [rbailey@mrc.gm](mailto:rbailey@mrc.gm))

**Dr Richard BOWMAN**, Trachoma Research Fellow, c/o International Centre for Eye Health, Institute of Ophthalmology, University College London, 11-43 Bath Street, London EC1V 9EL, United Kingdom  
(Fax +44 171 250 3207 (ICEH) - Tel +44 171 608 6907 (ICEH) - E.mail: [ichbowman@compuserve.com](mailto:ichbowman@compuserve.com))

**Professor Luciano CERULLI**, Professor of Ophthalmology, Cattedra di Ottica Fisiopatologica, Dipartimento di Chirurgia, Università degli studi di Roma "Tor Vergata", Via Orazio Raimondo s.n.c., 00173 Roma, Italy  
(Fax +39 6 202 6232 - Tel +39 68 41 6132 - E.mail: [cerulli@utovrm.it](mailto:cerulli@utovrm.it))

**Dr Paul COURTRIGHT**, Director, University of British Columbia Centre for Epidemiologic & International Ophthalmology, St. Paul's Hospital, 1081 Burrard Street, Vancouver, B.C. V6Z 1Y6, Canada  
(Fax +1 604 631 8058 - Tel +1 604 631 8169 - E.mail: [pcourtright@stpaulshosp.bc.ca](mailto:pcourtright@stpaulshosp.bc.ca))

**Dr Chandler DAWSON**, Professor, Francis I. Proctor Foundation for Research in Ophthalmology, University of California San Francisco, 513 Parnassus Street, San Francisco, CA 94143-0412, USA  
(Fax. +1 415 388 7995 - Tel +1 415 476 1441 or 8137 - E.mail: [dawson@itsa.ucsf.edu](mailto:dawson@itsa.ucsf.edu))

**Dr Deborah DEAN**, Associate Professor of Medicine & Associate Research Scientist, University of California at San Francisco and Children's Hospital Oakland Research Institute, CHORI, 57000 Martin Luther King Jr. Way, Oakland California, CA 94609, USA  
(Fax. +1 510 450 7910 - Tel. +1 510 450 7655 - E.mail: [debd@itsa.ucsf.edu](mailto:debd@itsa.ucsf.edu))

**Dr Paul EMERSON**, Public Health Entomologist, Durham University, Medical Research Council Laboratories, MRC Farafenni, P.O. Box 273, Banjul, The Gambia  
(Fax. 220 735 512 - Tel. 220 735 239 - E.mail: [pemerson@mrc.gm](mailto:pemerson@mrc.gm))

**Dr Kevin FRICK**, Assistant Professor, Department of Health Policy and Management, Johns Hopkins School of Hygiene and Public Health, 624 North Broadway, Room 606, Baltimore, MD 2105-1901, USA  
(Fax. +1 410 955 0470 - Tel. +1 410 614 4018 - E.mail: [kfrick@jhsph.edu](mailto:kfrick@jhsph.edu))

**Ms Laura J. FROST**, Project Manager and Doctoral Candidate, Research Project on Trachoma, Department of Population and International Health, Harvard School of Public Health, Riverrun, The Glen, Crosshaven Cork, Ireland  
(Fax. +353 21 904236 - Tel. +353 21 832 431 (home) - E.mail: [lfrost@hsph.harvard.edu](mailto:lfrost@hsph.harvard.edu)  
or [laurajfrost@hotmail.com](mailto:laurajfrost@hotmail.com))



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**Dr John HUBLEY**, Senior Lecturer in Health Promotion and International Health Promotion Consultant,  
21 Arncliffe Road, Leeds LS6 5AP, United Kingdom  
(Fax. +44 113 230 5224 - Tel. +44 113 275 5486 - E.mail: [John@hublely.co.uk](mailto:John@hublely.co.uk))

**Professor Gordon JOHNSON**, Professor, International Centre for Eye Health, Institute of Ophthalmology,  
University College London, 11-43 Bath Street, London EC1V 9EL, United Kingdom  
(Fax +44 171 250 3207 - Tel +44 171 608 6907- E.mail: [g.johnson@ucl.ac.uk](mailto:g.johnson@ucl.ac.uk))

**Dr K. KONYAMA**, Department of Ophthalmology, Juntendo University School of Medicine, 3-1-3 Hongo  
Bunkyo-ku, Tokyo, Japan  
(Fax. 81338170260 - Tel. 81338133111 - E.mail: [kkon@interlink.or.jp](mailto:kkon@interlink.or.jp) & [juntenop@iris.dti.ne.jp](mailto:juntenop@iris.dti.ne.jp))

**Dr Thomas LIETMAN**, Director, WHO Collaborating Center for Prevention of Blindness, Francis I. Proctor  
Foundation for Research in Ophthalmology, University of California, San Francisco, CA 94143-0944, USA  
(Fax. 14154760527 - Tel. 14155022662 - E.mail: [tml@itsa.ucsf.edu](mailto:tml@itsa.ucsf.edu))

**Dr Hans LIMBURG**, Senior Research Fellow, International Centre for Eye Health, Institute of Ophthalmology,  
University College London  
Private address: Bourgondiëweg 63, 161 WC Bovenkarspel , The Netherlands  
(Fax. +31 228 523 853 - Tel. +31 228 515 481 - E.mail: [h.limburg@worldonline.nl](mailto:h.limburg@worldonline.nl))

**Dr Norma Helen MEDINA**, Director, Serviço de Oftalmologia Sanit., Centro de Vigilância Epide., Instituto de  
Saúde, Secretaria de Estado da Saúde, 351 Avenida Dr Arnaldo, 6 andar Cerqueira Cesar, Sao Paulo S.P.,  
CEP 01246-902, Brazil (Fax. 55 11 853 5962 - Tel. 55 11 853 5962 - E.mail: [medina@uspifl.if.usp.br](mailto:medina@uspifl.if.usp.br))

**Dr David MABEY**, Professor of Communicable Diseases, Department of Infectious & Tropical Diseases, London  
School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom  
(Fax +44 171 637 4314 - Tel +44 171 927 2297 – E.mail: [d.mabey@lshtm.ac.uk](mailto:d.mabey@lshtm.ac.uk))

**Professor David MORLEY**, Emiritus Professor of Tropical Child Health, Institute of Child Health, University of  
London, 51 Eastmoor Park, Harpenden , AL5 1BN, United Kingdom  
(Tel. & Fax. 44 1582 712 199 / E.mail: [David@morleydc.demon.co.uk](mailto:David@morleydc.demon.co.uk))

**Dr Anthony SOLOMON**, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT,  
United Kingdom (Tel. +44 171 612 7867 - E.mail: [anthony.solomon@lshtm.ac.uk](mailto:anthony.solomon@lshtm.ac.uk))

**Professor Sheila WEST**, Professor of Ophthalmology & Epidemiology, International Center for Epidemiologic  
& Preventive Ophthalmology, Dana Center, The Wilmer Institute, Johns Hopkins School of Medicine, 600  
North Wolfe Street, Baltimore, Maryland, 21205, USA  
(Tel. +1 410 955 2606 / Fax. +1 410 955 0096 / E.mail: [swest@dcpom.med.jhu.edu](mailto:swest@dcpom.med.jhu.edu))

#### **REPRESENTATIVES OF PFIZER INC. (OBSERVERS)/REPRÉSENTANTS DE PFIZER INC. (OBSERVATEURS)**

**Dr George FLOUTY**, Medical Director, Pfizer Pharmaceuticals Group, Pfizer Inc., 235 East 42nd Street,  
New York, NY 10017-5755, USA  
(Fax +1 212 808 8827 - Tel. +1 212 573 7507 – E.mail: [floutg@pfizer.com](mailto:floutg@pfizer.com))

**Ms Paula LUFF**, Manager, Corporate Philanthropy Programs, Pfizer Inc., The Pfizer Foundation, 235 East 42nd  
Street, New York, NY 10017-5755, USA  
(Fax +1 212 573 2883 - Tel +1 212 573 2932 -E.mail:[pluff@pfizer.com](mailto:pluff@pfizer.com))

#### **SECRETARIAT/SECRÉTARIAT**

**Dr Mary COUPER**, Medical Officer, Essential Drugs and Other Medicines, Health Technology and  
Pharmaceuticals, World Health Organization, 1211 Geneva 27, Switzerland

- 
- Dr Dirk ENGELS**, Medical Officer, Communicable Disease Prevention and Control, Communicable Diseases, World Health Organization, 1211 Geneva 27, Switzerland
- Dr Silvio MARIOTTI**, Medical Officer, Prevention of Blindness and Deafness, Disability/Injury Prevention and Rehabilitation, World Health Organization, 1211 Geneva 27, Switzerland  
(Fax +41 22 791 4772 - Tel +41 22 791 3491 - E.mail:mariottis@who.ch)
- Dr J.-P. MEERT**, Scientist, Health Map, Division of Control of Tropical Diseases, World Health Organization, 1211 Geneva 27, Switzerland  
(Fax +41 22 791 4777 - Tel +41 22 791 3881 - E.mail meertj@who.ch)
- Dr André-Dominique NÉGREL**, Medical Officer, Prevention of Blindness and Deafness, Disability/Injury Prevention and Rehabilitation, World Health Organization, 1211 Geneva 27, Switzerland (**Co-SECRETARY**)  
(Fax +41 22 791 4772 - Tel + 41 22 791 2652 - E.mail:négrela@who.ch)
- Dr R. PARARAJASEGARAM**, Medical Officer, Prevention of Blindness and Deafness, Disability/Injury Prevention and Rehabilitation, World Health Organization, 1211 Geneva 27, Switzerland  
(Fax +41 22 791 4772 - Tel + 41 22 791 2652 - E.mail:parar@who.ch)
- Dr Annette PRÜSS**, Technical Officer, Protection of the Human Environment, Sustainable Development and Healthy Environments, World Health Organization, 1211 Geneva 27, Switzerland  
(Fax + 41 22 791 4159 - Tel +41 22 791 3584 - E.mail Pruessa@who.ch )
- Dr S. RESNIKOFF**, Medical Officer and Acting Team Coordinator, Prevention of Blindness and Deafness, Disability/Injury Prevention and Rehabilitation, World Health Organization, 1211 Geneva 27, Switzerland (**SECRETARY**)  
(Fax +41 22 791 4772 - Tel + 41 22 791 2652 - E.mail:resnikoffs@who.ch)
- Dr Y. SUZUKI**, Executive Director, Health and Social Change, World Health Organization, 1211 Geneva 27, Switzerland  
(Fax. +41 22 791 4831 – Tel. +41 22 791 2511 – E.mail: suzukiy@who.ch)
- Dr Björn THYLEFORS**, Director, Disability/Injury Prevention and Rehabilitation, World Health Organization, 1211 Geneva 27, Switzerland  
(Fax +41 22 791 4772 - Tel +41 22 791 2697 - E-mail:thyleforsb@who.ch)
- Dr Rosamund WILLIAMS**, Medical Officer, Communicable Disease Surveillance and Response, Communicable Diseases, World Health Organization, 1211 Geneva 27, Switzerland





**ANNEX 3: Table 1. Results of the Trachoma Rapid Assessment in The Gambia (1999)**

Division District Village Longitude Latitude	KMC Kombo West Ebou Town 1485745 318607		Western Foni Bintang Kusamai 1456752 372486		Western Foni Bintang Gilanfar 1456050 376909		Western Kombo North Old Yundum Sanchaba 1477627 317432		Western Foni Bintang Bulanjor 1468608 364873		Western Kombo North Kunkujang Ketana 1475900 326794	
<b>--- FORM 1 ---</b>	Team A	TeamC	Team B	Team D	Team B	Team D	Team A	Team C	Team B	Team D	Team A	TeamC
Date	5/17/99	7/26/99	5/18/99	7/24/99	5/19/99	7/24/99	5/19/99	7/23/99	5/20/99	7/23/99	5/20/99	7/24/99
Population (est.)	500	500	300	300	300	300	400	1000	600	400	500	500
Population (1993)	2563	2563	199	199	405	405	617	617	297	297	301	301
Score TTsurgery	1	1	1	1	1	2	0	1	2	2	0	1
Score PHC	0	0	1	1	1	2	0	0	0	0	0	0
<b>--- FORM 2 ---</b>												
No. trichiasis	11	6	3	0	2	0	4	4	2	2	1	1
No. TT+CO	3	1	2	0	0	0	3	2	0	0	0	0
No. TTrecurrent	2	5	2	0	0	0	0	0	0	0	0	0
% TT/Pop	2.2%	1.2%	1.0%	0.0%	0.7%	0.0%	1.0%	0.4%	0.3%	0.5%	0.2%	0.2%
Score TTprev.	4	3	3	0	2	0	3	1	1	2	1	1
<b>--- FORM 3 ---</b>												
<b>No. H Holds</b>	<b>23</b>	<b>20</b>	<b>14</b>	<b>19</b>	<b>16</b>	<b>16</b>	<b>20</b>	<b>23</b>	<b>18</b>	<b>20</b>	<b>23</b>	<b>24</b>
No. HHexposed	13	12	14	18	16	15	20	21	16	20	20	24
% HHexposure	57%	60%	100%	95%	100%	94%	100%	91%	89%	100%	87%	100%
Score Exposure	1	1	2	2	2	2	2	2	1	2	1	2
No. poor latrines	18	15	13	19	16	16	20	21	6	18	19	24
% poor latrines	78%	75%	93%	100%	100%	100%	100%	91%	33%	90%	83%	100%
Score Latrines	1	1	2	2	2	2	2	2	0	2	1	2
<b>--- FORM 4 ---</b>												
No. children	55	52	50	46	51	53	52	50	52	52	52	50
No. unclean face	31	5	31	17	26	16	37	6	26	28	13	6
% unclean face	56%	10%	62%	37%	51%	30%	71%	12%	50%	54%	25%	12%
Score unclean face	1	0	1	0	1	0	1	0	0	1	0	0
No. children TF-TI	6	9	16	17	11	11	10	5	3	12	3	3
% TF-TI	10.9%	17.3%	32.0%	37.0%	21.6%	20.8%	19.2%	10.0%	5.8%	23.1%	5.8%	6.0%
Score %TF-TI	1	1	2	2	2	2	1	1	1	2	1	1
<b>--- SUMMARY ---</b>												
	Ebou Town		Kusamai		Gilanfar		Old Yundum Sanchaba		Bulanjor		Kunkujang Ketana	
Score TT	5	4	4	1	3	2	3	2	3	4	1	2
Score TF-TI	1	1	3	3	3	4	1	1	1	2	1	1
Score Risk	3	2	5	4	5	4	5	4	1	5	2	4

**Annex 3 (continued) :Table 2.Trachoma Rapid Assessment in The Gambia**

Division	Western Kombo North		Western Foni Bintang		Western Kombo Central		Western Kombo South		Western Foni Bintang K.		Western Foni Bintang K.		Western Foni Berefet	
District	Madiana		Bajakarr		Dimbaya		Tintinto / Jamwely		Jifanga		Kassagne/Jakoi Bintang		Kaponga	
Village	Madiana		Bajakarr		Dimbaya		Tintinto / Jamwely		Jifanga		Kassagne/Jakoi Bintang		Kaponga	
Longitude	1476655		1460431		1456100		1478667		1455896		1463002		1456458	
Latitude	309186		378878		322700		311104		370803		366688		346427	
--- FORM 1 ---	Team A	Team C	Team A	Team C	Team B	Team D	Team B	Team D	Team A	Team C	Team A	Team C	Team A	Team C
Date	5/21/99	7/25/99	5/22/99	7/19/99	5/23/99	7/25/99	5/24/99	7/26/99	5/24/99	7/19/99	5/26/99	7/20/99	5/25/99	7/21/99
Population (est.)	500	1700	500	400	400	255	450	250	300	300	400	600	500	700
Population (1993)	1382	1382	507	507	195	195	187	187	405	405	222 + 160	222 + 160	461	461
Score TTsurgery	1	1	0	1	2	1	1	2	1	1	1	2	0	1
Score PHC	0	0	0	0	0	0	1	1	1	1	0	1	0	0
--- FORM 2 ---														
No. trichiasis	5	9	8	3	4	2	0	1	6	4	6	3	5	5
No. TT+CO	3	1	4	0	3	2	0	1	0	0	1	1	1	1
No. TTrecurrent	1	0	0	0	0	0	0	0	2	0	2	2	2	2
% TT/Pop	1.0%	0.5%	1.6%	0.8%	1.0%	0.8%	0.0%	0.4%	2.0%	1.3%	1.5%	0.5%	1.0%	0.7%
Score TTprev.	3	1	3	2	3	2	0	1	4	3	3	2	3	2
--- FORM 3 ---														
No. HHolds	20	22	20	28	15	18	25	13	22	26	21	23	25	27
No. HHexposed	20	20	10	26	15	12	25	10	19	26	20	21	20	21
% HHexposure	100%	91%	50%	93%	100%	67%	100%	77%	86%	100%	95%	91%	80%	78%
Score Exposure	2	2	0	2	2	1	2	1	1	2	2	2	1	1
No. poor latrines	17	21	18	26	15	18	25	11	22	26	12	14	23	23
% poor latrines	85%	95%	90%	93%	100%	100%	100%	85%	100%	100%	57%	61%	92%	85%
Score Latrines	1	2	1	2	2	2	2	1	2	2	1	1	2	1
--- FORM 4 ---														
No. children	53	53	54	53	56	57	60	41	54	53	51	51	51	50
No. unclean face	31	14	34	7	32	21	5	13	32	12	30	7	29	8
% unclean face	58%	26%	63%	13%	57%	37%	8%	32%	59%	23%	59%	14%	57%	16%
Score unclean face	1	0	1	0	1	0	0	0	1	0	1	0	1	0
No. children TF-TI	24	12	4	3	22	10	5	10	25	11	7	6	12	9
% TF-TI	45.3%	22.6%	7.4%	5.7%	39.3%	17.5%	8.3%	24.4%	46.3%	20.8%	13.7%	11.8%	23.5%	18.0%
Score %TF-TI	3	2	1	1	2	1	1	2	3	2	1	1	2	1
--- SUMMARY ---														
	Madiana		Bajakarr		Dimbaya		Tintinto / Jamwely		Jifanga		Kassagne/Jakoi Bintang		Kaponga	
Score TT	4	2	3	3	5	3	1	3	5	4	4	4	3	3
Score TF-TI	3	2	1	1	2	1	2	3	4	3	1	2	2	1
Score Risk	4	4	2	4	5	3	4	2	4	4	4	3	4	2

