



*Global  
Human Resource Development  
Assessment For  
Comprehensive Eye Care*

*June 2006*



**Human Resource Development Working Group**  
Report compiled at:  
**Pakistan Institute of Community Ophthalmology**

## *Acknowledgements*

---

*This document has been prepared through the tireless efforts of many individuals, organizations and institutes. Their efforts are deeply appreciated. We specifically acknowledge the efforts of the following individuals who made crucial contribution in creating this document.*

- *Dr.R.Pararajasegaram & Dr.Bruce Spivey Co-Chairs HRDWG*
- *Dr. Gullapalli N. Rao President IAPB*
- *Team at Pakistan Institute of Community Ophthalmology, Peshawar*  
*Dr. Mohammad Babar Qureshi*  
*Dr. Ayesha S Abdullah*  
*Dr. Zahid Jadoon*  
*Mr. Ali Tajik*  
*Mr. Nauman Saeed*  
*Ms. Naz Jahangir*  
*Mr. Mohammad Omer Abdullah*
- *Dr. Khabir Ahmed, Agha Khan Medical University*
- *All the contact and resource persons who were contacted for either data collection or identification of resource persons for the purpose of data collection*
- *Suzanne Gilbert Secretary HRDWG*
- *Daksha Patel from International Center For Eye Health London*
- *Mr. R.D. Thulasiraj, Executive Director LAICO.*

&

*Prof. Mohammad Daud Khan, Rector KIOMS*

## *Contents*

---

<b>i</b>	<b>List of abbreviations</b>	<b>4</b>
<b>ii</b>	<b>List of tables</b>	<b>5</b>
<b>iii</b>	<b>List of maps</b>	<b>7</b>
<b>1</b>	<b>Introduction</b>	<b>8</b>
<b>2</b>	<b>Objectives</b>	<b>11</b>
<b>3</b>	<b>Methods</b>	<b>12</b>
<b>4</b>	<b>Results</b>	<b>16</b>
<b>4.1</b>	<b>Regional situation analysis of eye care HR</b>	<b>17</b>
	4.1.1 Africa	17
	4.1.2 Americas	35
	4.1.3 Eastern Mediterranean	41
	4.1.4 Europe	53
	4.1.5 South- East Asia	60
	4.1.6 Western Pacific Region	68
<b>4.2</b>	<b>Training institutes for eye care personnel</b>	<b>83</b>
<b>5</b>	<b>Limitations of the study</b>	<b>90</b>
<b>6</b>	<b>Recommendations</b>	<b>91</b>
<b>7</b>	<b>Annexes</b>	
	Annex 1: Templates	92
	Annex 2: Key to the templates	96
	Annex 3: List of resource personnel	98
	Annex 4: Vision 2020 Directory of Courses	103
	Annex 5: Additional information about training courses	127

### *List of abbreviations*

---

WPR	Western Pacific Region
SEA	South –East Asia
EMR	Eastern Mediterranean
CEH	Community Eye Health
Ophthalmol	Ophthalmologist
Optomet	Optometrists
WHO	World health Organization
NCPB	National Committee for the Prevention of Blindness
HMIS	Health Management Information System

## *List of Tables*

---

<b>1</b>	<b>Spectrum of categories for the availability of HR</b>	<b>14</b>
<b>2</b>	<b>Regional summary of Africa regarding the availability of ophthalmologists</b>	<b>17</b>
<b>3</b>	<b>Country- wise distribution of ophthalmologists in Africa</b>	<b>18</b>
<b>4</b>	<b>Gap analysis in relation to the number of ophthalmologist in Africa</b>	<b>21</b>
<b>5</b>	<b>Regional summary of Africa regarding the availability of optometrists</b>	<b>23</b>
<b>6</b>	<b>Country- wise distribution of optometrists in Africa</b>	<b>24</b>
<b>7</b>	<b>Gap analysis in relation to the number of optometrists in Africa</b>	<b>27</b>
<b>8</b>	<b>Regional summary of Africa regarding the availability of Ophthalmic allied personnel</b>	<b>29</b>
<b>9</b>	<b>Country- wise distribution of Ophthalmic allied personnel in Africa</b>	<b>30</b>
<b>10</b>	<b>Gap analysis in relation to the number of Ophthalmic allied personnel in Africa</b>	<b>33</b>
<b>11</b>	<b>Regional summary of Americas regarding the availability of ophthalmologists</b>	<b>35</b>
<b>12</b>	<b>Country- wise distribution of ophthalmologists in Americas</b>	<b>36</b>
<b>13</b>	<b>Gap analysis in relation to the number of ophthalmologists in Americas</b>	<b>39</b>
<b>14</b>	<b>Regional summary of EMR regarding the availability of ophthalmologists</b>	<b>41</b>
<b>15</b>	<b>Country- wise distribution of ophthalmologists in EMR</b>	<b>42</b>
<b>16</b>	<b>Gap analysis in relation to the number of ophthalmologists in EMR</b>	<b>44</b>
<b>17</b>	<b>Regional summary of EMR regarding the availability of optometrists</b>	<b>45</b>
<b>18</b>	<b>Country- wise distribution of optometrists in EMR</b>	<b>46</b>
<b>19</b>	<b>Gap analysis in relation to the number of optometrists in EMR</b>	<b>48</b>
<b>20</b>	<b>Regional summary of EMR regarding the availability of Ophthalmic allied personnel</b>	<b>49</b>

21	Country- wise distribution of Ophthalmic allied personnel in EMR	50
22	Gap analysis in relation to the number of Ophthalmic allied personnel in EMR	52
23	Regional summary of Europe regarding the number of ophthalmologists	53
24	Country- wise distribution of ophthalmologists in Europe	54
25	Gap analysis in relation to the number of ophthalmologists in Europe	57
26	Regional summary of SEA regarding the number of ophthalmologists	60
27	Country- wise distribution of ophthalmologists in SEA	61
28	Gap analysis in relation to the number of ophthalmologists in SEA	63
29	Regional summary of SEA regarding the number of Ophthalmic allied personnel	64
30	Country- wise distribution of Ophthalmic allied personnel in SEA	65
31	Gap analysis in relation to the number of Ophthalmic allied personnel in SEA	67
32	Regional summary of WPR regarding the number of ophthalmologists	68
33	Country- wise distribution of ophthalmologists in WPR	69
34	Gap analysis in relation to the number of ophthalmologists in WPR	71
35	Regional summary of WPR regarding the number of optometrists	72
36	Country- wise distribution of optometrists in WPR	73
37	Gap analysis in relation to the number of optometrists in WPR	76
38	Regional summary of WPR regarding the number of Ophthalmic allied personnel	77
39	Country- wise distribution of Ophthalmic allied personnel in WPR	78
40	Gap analysis in relation to the number of Ophthalmic allied personnel in WPR	80
41	Summary of all regions	82

## *List of Maps*

---

<b>1</b>	<b>Country- wise distribution of ophthalmologists in Africa</b>	<b>20</b>
<b>2</b>	<b>Country- wise distribution of optometrists in Africa</b>	<b>26</b>
<b>3</b>	<b>Country- wise distribution of Ophthalmic allied personnel in Africa</b>	<b>32</b>
<b>4</b>	<b>Country- wise distribution of ophthalmologists in Americas</b>	<b>33</b>
<b>5</b>	<b>Country- wise distribution of ophthalmologists in EMR</b>	<b>43</b>
<b>6</b>	<b>Country- wise distribution of optometrists in EMR</b>	<b>47</b>
<b>7</b>	<b>Country- wise distribution of Ophthalmic allied personnel in EMR</b>	<b>51</b>
<b>8</b>	<b>Country- wise distribution of ophthalmologists in Europe</b>	<b>56</b>
<b>9</b>	<b>Country- wise distribution of ophthalmologists in SEA</b>	<b>62</b>
<b>10</b>	<b>Country- wise distribution of Ophthalmic allied personnel in SEA</b>	<b>66</b>
<b>11</b>	<b>Country- wise distribution of ophthalmologists in WPR</b>	<b>70</b>
<b>12</b>	<b>Country –wise distribution of optometrists in WPR</b>	<b>75</b>
<b>13</b>	<b>Country- wise distribution of Ophthalmic allied personnel in WPR</b>	<b>79</b>
<b>14</b>	<b>Training institutes in Africa</b>	<b>84</b>
<b>15</b>	<b>Training institutes in Americas</b>	<b>85</b>
<b>16</b>	<b>Training institutes in EMR</b>	<b>86</b>
<b>17</b>	<b>Training institutes in Europe</b>	<b>87</b>
<b>18</b>	<b>Training institutes in SEA</b>	<b>88</b>
<b>19</b>	<b>Training institutes in WPR</b>	<b>89</b>

## 1. Introduction

---

Human resource is the most important asset of any health system and their availability and quality are key determinants of efficiency and quality of health services provided. It is crucial to the success and sustainability of all health care provision interventions.

VISION 2020: The Right to Sight, a global initiative to eliminate avoidable blindness, is a partnership between the World Health Organization (WHO), and the International Agency for Prevention of Blindness (IAPB), a large umbrella organization for eye-care professional groups and nongovernmental organizations (NGOs) involved in eye-care.

The aim of VISION 2020 is to eliminate avoidable blindness by the year 2020. Attainment of this aim implies the development of a sustainable comprehensive health-care system to ensure the best possible vision for all people and thereby improve quality of life. Human resource development (training and motivation) is an essential component of the VISION 2020 programme and has been recommended to be part of all existing and future VISION 2020 action plans.





Despite worldwide recognition of its importance, there is lack of data on the global situation of human resource in eye care. To create a focus on HRD VISION 2020 has constituted a Human Resource Development Working Group (HRDWG). This working group has the following terms of references:

1. Use the existing data available from WHO, ICO, WHO Collaborating Centres, Ministries and other agencies to assess the availability of human resources in different cadres and their skill levels; training resources and the level of their utilization.
2. Whenever the Global Initiative document and other key VISION 2020-related publications are scheduled for revision, the HRWG will review and revise the HR section.
3. Develop and propose a strategic plan for achieving the Human Resource Development goals before the year 2020 (possibly by 2015). Take into account the many HR activities already underway within condition-focused initiatives and national plans. The plan will promote optimal use of today's personnel, their continuing education, and the training of new personnel for deployment in regions of greatest need. Issues of team building, access, availability, and quality of resulting services will be the broader framework.
4. Establish criteria and framework for IAPB Resource Centers for VISION 2020 to promote and provide training for all levels of eye care personnel, with priority given to countries of greatest need.
5. Advocate the adoption of existing professional practice guidelines, as applicable to different levels of national health systems.
6. Facilitate creation of pilot projects that rapidly accelerate human resource development. For example: Facilitate development of Training Centres in different regions in collaboration with other organizations.
7. Encourage dissemination of basic minimum standards for Ophthalmology Residency training developed by ICO.
8. Respond to specific requests made by the WHO and/or the IAPB Board of Trustees that fall within the mandate of the HRWG.

9. Report at periodic intervals at the Meetings of WHO PBD and the IAPB Board of Trustees.
10. Access resources from VISION 2020 for fulfillment of Terms of Reference.

## 2. Objectives

---

Addressing the first term of reference HRDWG decided to undertake a global situation analysis on available human resource in Comprehensive eye care.

The situation analysis had the following objectives:

- To collect data globally and regionally on available human resources and their skill levels in eye care.
- To collect National disaggregated data on available human resources and training centers from countries identified as priority countries by the WHO.
- To identify the teaching and training institutions currently offering training of different cadres in the eye care team in the regions.
- To undertake gap analysis regionally keeping the VISION 2020 guidelines available.

### *3. Methods*

---

In March 2006, a multidisciplinary team was formed to conduct the study. The team comprised of 2 community ophthalmologist, 2 epidemiologists, a data manger with two assistants, and a research medical officer. The methodology for data collection was based on multi-method approach. For collecting updated regional and country- based data special templates were designed in view of the objectives set for the situation analysis. From April 1-5, 2006, the team created data collection templates. The templates comprised of two Microsoft Word files (one for training institutions of doctors and one for allied eye care personnel) and two Microsoft Excel files(1 for doctors and 1 for allied health personnel). At the regional level the information aimed at for doctors working in eye care, was the total number of each of the specified categories in all the countries in a specific WHO-region. The same strategy was followed for optometrists and allied personnel in eye care. The templates are given in annex 1 and the variables are defined in annex 2.

The templates were reviewed and approved by the Vision 2020 Human Resource Development Working Group. Contact persons were identified in each of WHO's 6 regions (Africa, Americas, EMR. Europe, SEA and WPR) and in the 20 priority countries (List of individuals, organizations and institutions contacted is given in Annex 3).

They were requested by email, courier, post and telephone calls to fill the templates or send reports addressing the templates with in one month and also provide reports which could act as reference for such information.

The information received was not as detailed and consistent as required to fill the templates therefore the categories defined in the templates had to be recategorized during analysis and summarized into just three categories of ophthalmologist, optometrist and allied personnel.

The data was analyzed in Microsoft Excel. For mapping the information the Global Information System (GIS), Arc view 3.1 was used.

For gap- analysis the vision 2020 targets<sup>1</sup> for 2010 were used. The targets are given in information box 1.

**Information box 1: Vision 2020 targets for human resource for 2010**

**Africa**

---

Ophthalmologist	1 per 400,000 population
Ophthalmic medical assistants & ophthalmic nurses	1 per 200,000 population

**Asia**

---

Ophthalmologist	1 per 100,000 population
Ophthalmic medical assistants & ophthalmic nurses	1 per 100,000 population

Based on these targets a spectrum of categories was formulated to analyze the region- based data. These categories are summarized in table 1.

**Table 1: spectrum of categories for the availability of human resource**

Region	Defining criteria	Category	Colour code for mapping
<b>Africa</b>			
Ophthalmologist	1 per <400,000 population	A	Green
	1 per >=400,000-<500,000	B	Blue
	1 per > =500,000	C	Red
	Data not available	D	Yellow
Optometrist	1 per <400,000 population	A	Green
	1 per >=400,000-<500,000	B	Blue
	1 per > =500,000	C	Red
	Data not available	D	Yellow
Allied personnel (OMA & ophthalmic nurses)	1 per <100,000 population	A	Green
	1 per >=100,000- <200,000	B	Blue
	1 per >=200,000	C	Red
	Data not available	D	Yellow
<b>Americas</b>			
Ophthalmologist	1 per < 50,000 population	A	Green
	1 per >=50,000 to <100,000	B	Blue
	1 Americas	C	Red
	per >= 100,000	D	Yellow
	Data not available Since no information could be gathered from this region regarding other specified cadres therefore further categorization was not done		
<b>Eastern Mediterranean</b>			
Ophthalmologist	1 per <100,000 population	A	Green
	1 per >=100,000-300,000	B	Blue
	1 per > =300,000	C	Red
	Data not available	D	yellow
Optometrist	1 per <100,000 population	A	Green
	1 per >=100,000-300,000	B	Blue
	1 per > =300,000	C	Red
	Data not available	D	Yellow
Allied personnel (OMA & ophthalmic nurses)	1 per <50,000 population	A	Green
	1 per >=50,000- <100,000	B	Blue
	1 per >=100,000	C	Red
	Data not available	D	Yellow

Region	Defining criteria	Category	Colour code for mapping
<b>Europe</b>			
Ophthalmologist	1 per < 50,000 population	A	Green
	1 per >=50,000 to <100,000	B	Blue
	1 per >= 100,000	C	Red
	Data not available	D	yellow
	Since no information could be gathered from this region regarding other specified cadres therefore further categorization was not done		
<b>South-East Asia</b>			
Ophthalmologist	1 per <100,000 population	A	Green
	1 per >=100,000-300,000	B	Blue
	1 per > =300,000	C	Red
	Data not available	D	yellow
Optometrist	Data regarding this cadre was not available in this region hence no further analysis was done		
Allied personnel (OMA & ophthalmic nurses)	1 per <50,000 population	A	Green
	1 per >=50,000- <100,000	B	Blue
	1 per >=100,000	C	Red
	Data not available	D	Yellow
<b>Western Pacific</b>			
Ophthalmologist	1 per <100,000 population	A	Green
	1 per >=100,000-300,000	B	Blue
	1 per > =300,000	C	Red
	Data not available	D	yellow
Optometrist	1 per <100,000 population	A	Green
	1 per >=100,000-300,000	B	Blue
	1 per > =300,000	C	Red
	Data not available	D	Yellow
Allied personnel (OMA & ophthalmic nurses)	1 per <50,000 population	A	Green
	1 per >=50,000- <100,000	B	Blue
	1 per >=100,000	C	Red
	Data not available	D	Yellow

### Information box 2: Categories for analysis

<b>A</b>	<b>meets the Vision 2020 targets</b>
<b>B</b>	<b>moderate HR needs</b>
<b>C</b>	<b>greatest HR needs</b>
<b>D</b>	<b>HR needs + greatest need for data on HR</b>

## 4. Results

---

This report addresses the global and aggregated data only, although the data collection for country –based data was also attempted but till the deadline for data collection no significant progress could be made on this front. Also the report is the first of a series and will be updated as and when more data becomes available. Data still continues to trickle in specially on Optometrists and Allied personnel. Those that read the report and who have more information and data are requested to kindly contact Dr. M. Babar Qureshi on [cbmpak@pes.comsats.net.pk](mailto:cbmpak@pes.comsats.net.pk) for inclusion in the subsequent reports.

Globally the paucity of data on human resource related to eye care was overwhelmingly highlighted as we found that the contact personnel had extreme difficulty in getting the data to start with and then to get a reference for such a data was even more difficult a task. Most of the information is based on available reports of WHO<sup>2</sup>, Vision 2020 workshops<sup>3</sup>, Vision 2020 reports, Vision 2020 websites<sup>4</sup> inputs from various eye care organizations<sup>5</sup>, institutions and individuals.

It was also seen that there was lack of definitions for different cadres of eye care personnel and it added to the difficulty in data collection.

The data is presented in the form of regional maps with detailed tables and relevant discussion under the categories of ophthalmologists, optometrists and allied eye care personnel. The information regarding training institutes is depicted in maps based on the availability of courses for ophthalmologists, community eye health and allied eye care personnel in various countries. The information is based on the VISION 2020 directory of training programmes (annexed with this report as annex). Any additional information collected during this study is given in annex 5.



## 4.1 Regional situation analysis of human resource for eye care

### 4.1.1 Africa

#### 4.1.1.1. Ophthalmologists

The total number of ophthalmologists in the region is 2210, the data from only one country was not available. Africa as a whole with one ophthalmologist/ 326676.5 population, belongs to category A. Apparently it meets the target set by the vision 2020 initiative i.e one ophthalmologist/ 400,000 population. However keeping in view the widely dispersed population of Africa and the state of communication and transport system, even if the said target is met, accessibility would be a major hurdle in providing eye care coverage to the population.

Out of the 46 countries in the region only 14 (30.43%) countries manage to be in category A, while 27 (58.69%) remain in category “c”, the red alert category. The regional summary is given in table 2 and details of all the countries in the region are summarized in table 3. The human resource availability for the ophthalmologist in the African region is portrayed in the given map 1. The findings of gap analysis as regards the number of ophthalmologists in each country are summarized in table 4.

**Table 2: Regional Summary of Africa regarding the availability of ophthalmologists**

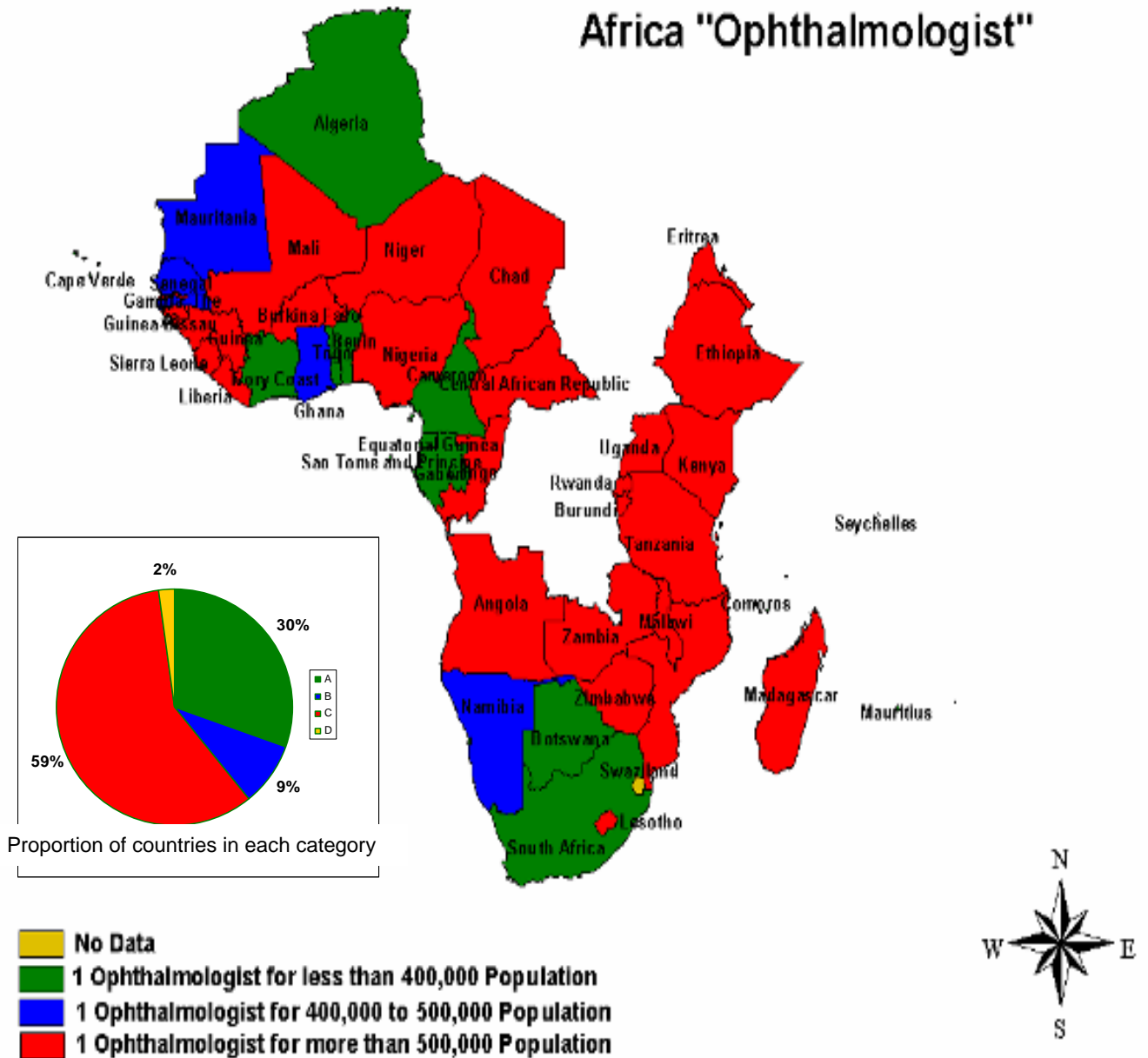
Category	Defining criteria	Number of countries
<b>A</b>	1 per <400,000 population	<b>14</b>
<b>B</b>	1 per >=400,000- <500,000	<b>4</b>
<b>C</b>	1 per > =500,000	<b>27</b>
<b>D</b>	Data not available	<b>1</b>

**Table 3: Country-wise distribution of ophthalmologists in Africa**

<b>S.NO</b>	<b>Country</b>	<b>Population (000)</b>	<b>Total No. of Ophthalmol.</b>	<b>Population Per Ophthalmologist</b>	<b>Category</b>
1	Algeria	32358	1000	32358.0	<b>A</b>
2	Angola	15490	10	1549000.0	<b>C</b>
3	Benin	8177	26	314500.0	<b>A</b>
4	Botswana	1769	9	196555.6	<b>A</b>
5	Burkina Faso	12822	21	610571.4	<b>C</b>
6	Burundi	7282	7	1040285.7	<b>C</b>
7	Cameroon	16038	51	314470.6	<b>A</b>
8	Cape Verde	495	6	82500.0	<b>A</b>
9	Central African Republic	3986	3	1328666.7	<b>C</b>
10	Chad	9448	3	3149333.3	<b>C</b>
11	Comoros	777	2	388500.0	<b>A</b>
12	Congo	3883	3	1294333.3	<b>C</b>
13	Cote d'Ivoire	17872	48	372333.3	<b>A</b>
14	Democratic Republic of Congo	55853	44	1269386.4	<b>C</b>
15	Equatorial Guinea	492	3	164000.0	<b>A</b>
16	Eritrea	4232	6	705333.3	<b>C</b>
17	Ethiopia	75600	76	994736.8	<b>C</b>
18	Gabon	1362	9	151333.3	<b>A</b>
19	Gambia	1478	2	739000.0	<b>C</b>
20	Ghana	21664	48	451333.3	<b>B</b>
21	Guinea	9202	7	1314571.4	<b>C</b>
22	Guinea-Bissau	1540	1	1540000.0	<b>C</b>

S.NO	Country	Population (000)	Total No. of ophthalmologists	Population Per Ophthalmologist	Category
23	Kenya	33467	60	557783.3	C
24	Lesotho	1798	2	899000.0	C
25	Liberia	3241	6	540166.7	C
26	Madagascar	18113	21	862523.8	C
27	Malawi	12608	6	2101333.3	C
28	Mali	13124	26	504769.2	C
29	Mauritania	2980	6	496666.7	B
30	Mauritius	1233	9	137000.0	A
31	Mozambique	19424	14	1387428.6	C
32	Namibia	2009	5	401800.0	B
33	Niger	13499	10	1349900.0	C
34	Nigeria	128709	255	504741.2	C
35	Rwanda	8882	5	1776400.0	C
36	Sao Tome and Principe	153	1	153000.0	A
37	Senegal	11386	25	455440.0	B
38	Seychelles	80	3	26666.7	A
39	Sierra Leone	5336	3	1778666.7	C
40	South Africa	47208	242	195074.4	A
41	Swaziland	1034	-	-	D
42	Togo	5988	17	352235.3	A
43	Uganda	27821	39	713359.0	C
44	United Republic of Tanzania	37627	31	1213774.2	C
45	Zambia	11479	14	819928.6	C
46	Zimbabwe	12936	25	517440.0	C
	<b>Regional aggregate</b>	<b>721955</b>	<b>2210</b>	<b>326676.5</b>	<b>A</b>

Map 1: Country-wise distribution of ophthalmologists in Africa



**Table 4: Gap analysis in relation to the number of Ophthalmologists in Africa**

	<b>Country</b>	<b>Total No. of ophthalmologists</b>	<b>Current ophthalmologist: Population ratio</b>	<b>Category</b>	<b>Number of ophthalmologists required to maintain the target ratio of 1: 400,000</b>
1	Algeria	1000	32358.0	<b>A</b>	-
2	Angola	10	1549000.0	<b>C</b>	39
3	Benin	26	314500.0	<b>A</b>	-
4	Botswana	9	196555.6	<b>A</b>	-
5	Burkina Faso	21	610571.4	<b>C</b>	33
6	Burundi	7	1040285.7	<b>C</b>	19
7	Cameroon	51	314470.6	<b>A</b>	-
8	Cape Verde	6	82500.0	<b>A</b>	-
9	Central African Republic	3	1328666.7	<b>C</b>	10
10	Chad	3	3149333.3	<b>C</b>	24
11	Comoros	2	388500.0	<b>A</b>	-
12	Congo	3	1294333.3	<b>C</b>	10
13	Cote d'Ivoire	48	372333.3	<b>A</b>	-
14	Democratic Republic of Congo	44	1269386.4	<b>C</b>	140
15	Equatorial Guinea	3	164000.0	<b>A</b>	-
16	Eritrea	6	705333.3	<b>C</b>	11
17	Ethiopia	76	994736.8	<b>C</b>	190
18	Gabon	9	151333.3	<b>A</b>	-
19	Gambia	2	739000.0	<b>C</b>	4
20	Ghana	48	451333.3	<b>B</b>	55
21	Guinea	7	1314571.4	<b>C</b>	24
22	Guinea-Bissau	1	1540000.0	<b>C</b>	4

	Country	Total No. of ophthalmologists	Current ophthalmologist: Population ratio	Category	Number of ophthalmologists required to maintain the target ratio of 1: 400,000
23	Kenya	60	557783.3	C	84
24	Lesotho	2	899000.0	C	5
25	Liberia	6	540166.7	C	9
26	Madagascar	21	862523.8	C	46
27	Malawi	6	2101333.3	C	32
28	Mali	26	504769.2	C	33
29	Mauritania	6	496666.7	B	8
30	Mauritius	9	137000.0	A	-
31	Mozambique	14	1387428.6	C	49
32	Namibia	5	401800.0	B	6
33	Niger	10	1349900.0	C	34
34	Nigeria	255	504741.2	C	322
35	Rwanda	5	1776400.0	C	23
36	Sao Tome and Principe	1	153000.0	A	-
37	Senegal	25	455440.0	B	29
38	Seychelles	3	26666.7	A	-
39	Sierra Leone	3	1778666.7	C	14
40	South Africa	242	195074.4	A	-
41	Swaziland	-		D	3
42	Togo	17	352235.3	A	-
43	Uganda	39	713359.0	C	70
44	United Republic of Tanzania	31	1213774.2	C	95
45	Zambia	14	819928.6	C	29
46	Zimbabwe	25	517440.0	C	33
	<b>Regional aggregate</b>	<b>2210</b>	<b>326676.5</b>	<b>A</b>	<b>-</b>

#### 4.1.1.2. Optometrists

The total number of optometrists in Africa was found to be 1690 with an overall population ratio of one optometrist per 427192.3 people, placing the region in category B. The data concerning number of optometrists in each country was not available for almost half of the countries in the region. Eighteen (39.13%) of the countries belonged to category C while only 3(6.52%) of the countries were found to be in the A category. Regional summary is provided in table 5 while details of all the countries in the region are summarized in table 6. The human resource availability in terms of optometrists in the African region is mapped in the map 2. The findings of gap analysis as regards the number of ophthalmologists in each country are summarized in table 7.

**Table 5:Regional Summary of Africa regarding the availability of optometrists**

Category	Defining criteria	Number of countries
A	1 per <400,000 population	3
B	1 per >=400,000-<500,000	0
C	1 per > =500,000	18
D	Data not available	25

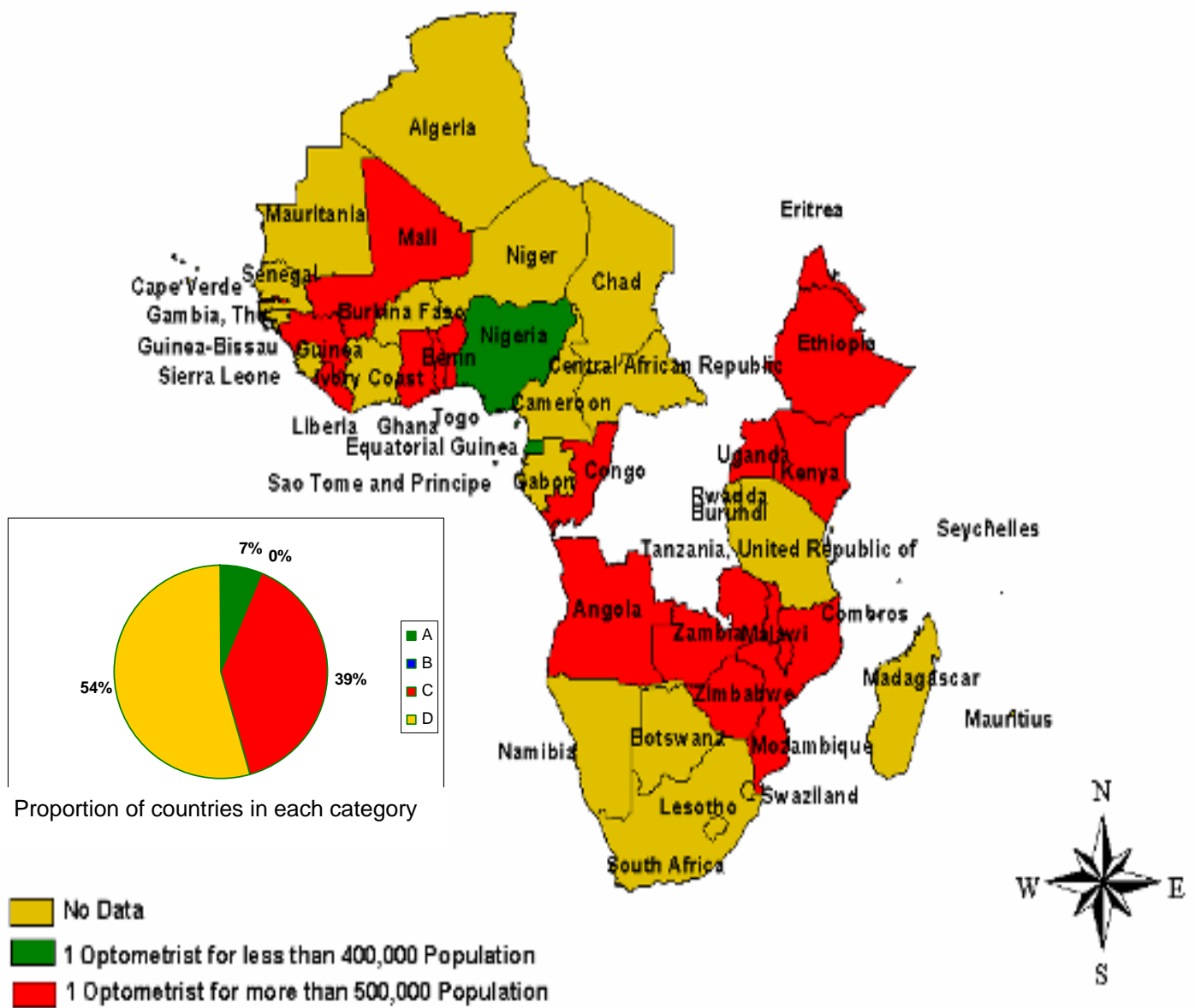
**Table 6: Country-wise distribution of optometrists in Africa**

	Country	Population (000)	Total No of Optometrists	Population per optometrist	Category
1	Algeria	32358	-	-	D
2	Angola	15490	15	1032666.7	C
3	Benin	8177	2	4088500.0	C
4	Botswana	1769	-	-	D
5	Burkina Faso	12822	-	-	D
6	Burundi	7282	-	-	D
7	Cameroon	16038	-	-	D
8	Cape Verde	495	-	-	D
9	Central African Republic	3986	-	-	D
10	Chad	9448	-	-	D
11	Comoros	777	1	777000.0	C
12	Congo	3883	-	-	D
13	Cote d'Ivoire	17872	-	-	D
14	Democratic Republic of Congo	55853	20	2792650.0	C
15	Equatorial Guinea	492	2	246000.0	A
16	Eritrea	4232	1	4232000.0	C
17	Ethiopia	75600	8	9450000.0	C
18	Gabon	1362	-	-	D
19	Gambia	1478	1	1478000.0	C
20	Ghana	21664	40	541600.0	C
21	Guinea	9202	2	4601000.0	C
22	Guinea-Bissau	1540	-	-	D
23	Kenya	33467	5	6693400.0	C
24	Lesotho	1798	-	-	D
25	Liberia	3241	2	1620500.0	C



	Country	Population (000)	Total No of Optometrists	Population per optometrist	Category
26	Madagascar	18113	-	-	D
27	Malawi	12608	2	6304000.0	C
28	Mali	13124	1	13124000.0	C
29	Mauritania	2980	-	-	D
30	Mauritius	1233	-	-	D
31	Mozambique	19424	1	19424000.0	C
32	Namibia	2009	-	-	D
33	Niger	13499	-	-	D
34	Nigeria	128709	1560	82505.8	A
35	Rwanda	8882	-	-	D
36	Sao Tome and Principe	153	-	-	D
37	Senegal	11386	-	-	D
38	Seychelles	80	2	40000.0	A
39	Sierra Leone	5336	-	-	D
40	South Africa	47208	-	-	D
41	Swaziland	1034	-	-	D
42	Togo	5988	1	5988000.0	C
43	Uganda	27821	14	1987214.3	C
44	United Republic of Tanzania	37627	-	-	D
45	Zambia	11479	2	5739500.0	C
46	Zimbabwe	12936	8	1617000.0	C
	<b>Regional aggregate</b>	<b>721955</b>	<b>1690</b>	<b>427192.3</b>	<b>B</b>

**Map 2: Country –wise distribution of optometrists in Africa**



**Table 7: Gap analysis in relation to the number of Optometrists in Africa**

	Country	Total No. of Optometrists	Current Optometrist :Population ratio	Category	Number of optometrists required to maintain the target ratio of 1: 400,000
1	Algeria	-	-	D	81
2	Angola	15	1032666.7	C	39
3	Benin	2	4088500.0	C	21
4	Botswana	-	-	D	5
5	Burkina Faso	-	-	D	33
6	Burundi	-	-	D	19
7	Cameroon	-	-	D	41
8	Cape Verde	-	-	D	2
9	Central African Republic	-	-	D	10
10	Chad	-	-	D	24
11	Comoros	1	777000.0	C	2
12	Congo	-	-	D	10
13	Cote d'Ivoire	-	-	D	45
14	Democratic Republic of Congo	20	2792650.0	C	140
15	Equatorial Guinea	2	246000.0	A	-
16	Eritrea	1	4232000.0	C	11
17	Ethiopia	8	9450000.0	C	189
18	Gabon	-	-	D	4
19	Gambia	1	1478000.0	C	4
20	Ghana	40	541600.0	C	55
21	Guinea	2	4601000.0	C	24
22	Guinea-Bissau	-	-	D	4
23	Kenya	5	6693400.0	C	84

	Country	Total No. of Optometrists	Current Optometrist :Population ratio	Category	Number of optometrists required to maintain the target ratio of 1: 400,000
24	Lesotho	-	-	D	5
25	Liberia	2	1620500.0	C	9
26	Madagascar	-	-	D	46
27	Malawi	2	6304000.0	C	32
28	Mali	1	13124000.0	C	33
29	Mauritania	-	-	D	8
30	Mauritius	-	-	D	4
31	Mozambique	1	19424000.0	C	49
32	Namibia	-	-	D	6
33	Niger	-	-	D	34
34	Nigeria	1560	82505.8	A	
35	Rwanda	-	-	D	23
36	Sao Tome and Principe	-	-	D	1
37	Senegal	-	-	D	29
38	Seychelles	2	40000.0	A	
39	Sierra Leone	-	-	D	14
40	South Africa	-	-	D	119
41	Swaziland	-	-	D	3
42	Togo	1	5988000.0	C	15
43	Uganda	14	1987214.3	C	70
44	United Republic of Tanzania	-	-	D	95
45	Zambia	2	5739500.0	C	29
46	Zimbabwe	8	1617000.0	C	33
	<b>Regional aggregate</b>	<b>1690</b>	<b>427192.3</b>	<b>B</b>	<b>1805</b>

#### 4.1.1.3. Ophthalmic allied personnel

The total number of ophthalmic allied personnel in Africa was found to be 7253 with a population ratio of one allied person per 99538.8 people. By virtue of this ratio Africa is placed in the A category but keeping in view the needs of the population and the accessibility barriers this number can not be considered as being sufficient. Seventeen (36.95%) of the countries belonged to the red alert category “c” while 15 (32.60%) countries were found to be in the A category. The data was not available for 6 countries.

Regional summary of the situation analysis of ophthalmic allied personnel in Africa is provided in table 8 while details of all the countries in the region are summarized in table 9. The human resource availability in terms of ophthalmic allied personnel in the African region is mapped in the map 3. The findings of gap analysis as regards the number of ophthalmic allied personnel in each country are summarized in table 10.

**Table 8: Regional Summary of the number of ophthalmic allied personnel in Africa**

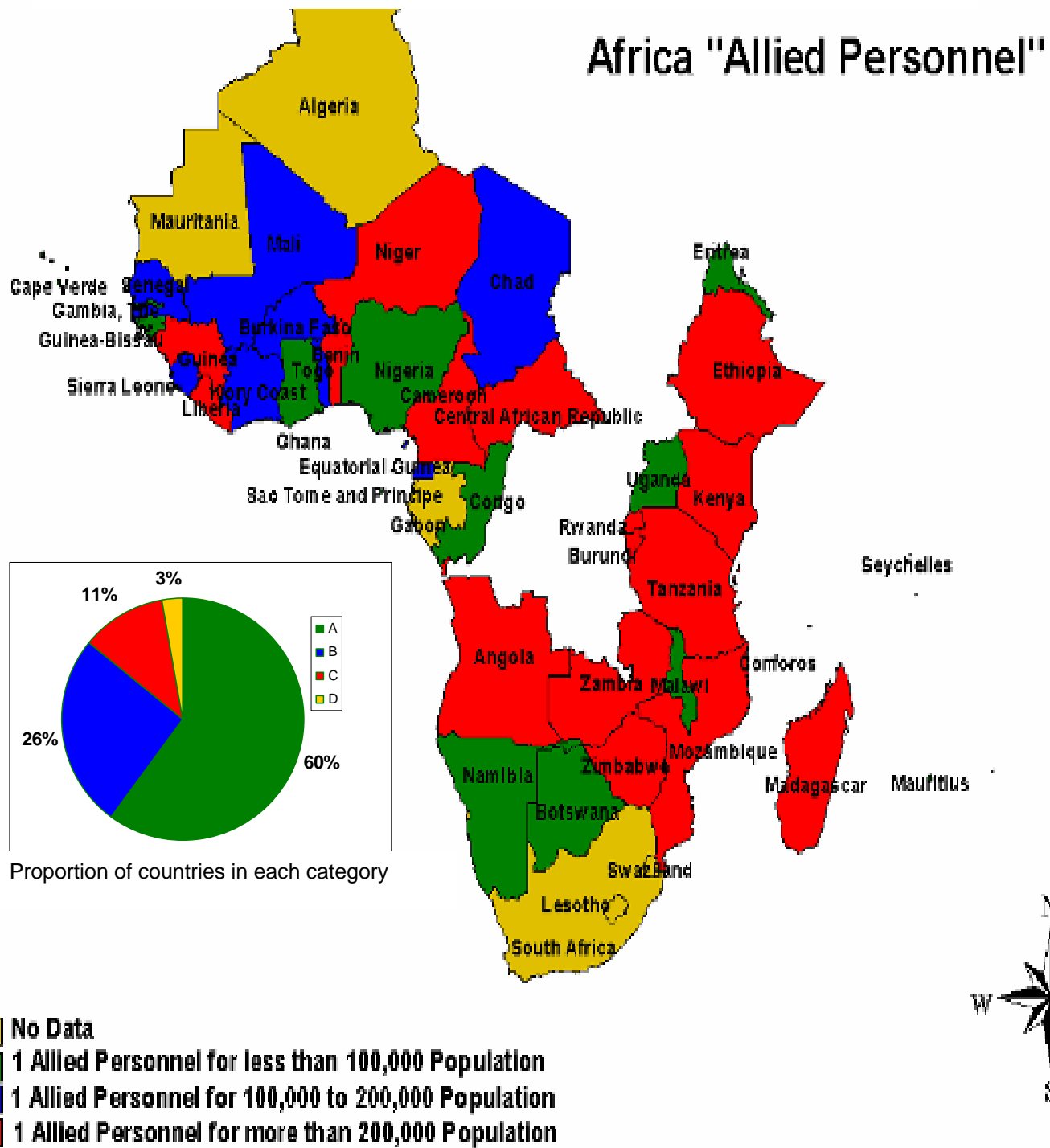
Category	Defining criteria	Number of countries
A	1 per <100,000 population	15
B	1 per >=100,000- <200,000	8
C	1 per >=200,000	17
D	Data not available	6

**Table 9: Country-wise distribution of ophthalmic allied personnel in Africa**

	Country	Population (000)	Total No of Allied Personnel's	Population per Allied Personnel	Category
1	Algeria	32358	-	-	D
2	Angola	15490	41	377804.9	C
3	Benin	8177	34	240500.0	C
4	Botswana	1769	104	17009.6	A
5	Burkina Faso	12822	104	123288.5	B
6	Burundi	7282	9	809111.1	C
7	Cameroon	16038	10	1603800.0	C
8	Cape Verde	495	9	55000.0	A
9	Central African Republic	3986	14	284714.3	C
10	Chad	9448	64	147625.0	B
11	Comoros	777	13	59769.2	A
12	Congo	3883	5	776600.0	C
13	Cote d'Ivoire	17872	102	175215.7	B
14	Democratic Republic of Congo	55853	617	90523.5	A
15	Equatorial Guinea	492	3	164000.0	B
16	Eritrea	4232	61	69377.0	A
17	Ethiopia	75600	183	413114.8	C
18	Gabon	1362	-	-	D
19	Gambia	1478	15	98533.3	A
20	Ghana	21664	1882	11511.2	A
21	Guinea	9202	33	278848.5	C
22	Guinea-Bissau	1540	19	81052.6	A
23	Kenya	33467	161	207869.6	C
24	Lesotho	1798	-	-	D
25	Liberia	3241	12	270083.3	C

	<b>Country</b>	<b>Population (000)</b>	<b>Total No of Allied Personnel's</b>	<b>Population per Allied Personnel</b>	<b>Category</b>
26	Madagascar	18113	67	270343.3	C
27	Malawi	12608	434	29050.7	A
28	Mali	13124	101	129940.6	B
29	Mauritania	2980	-	-	D
30	Mauritius	1233	92	13402.2	A
31	Mozambique	19424	67	289910.4	C
32	Namibia	2009	56	35875.0	A
33	Niger	13499	36	374972.2	C
34	Nigeria	128709	2070	62178.3	A
35	Rwanda	8882	5	1776400.0	C
36	Sao Tome and Principe	153	3	51000.0	A
37	Senegal	11386	105	108438.1	B
38	Seychelles	80	15	5333.3	A
39	Sierra Leone	5336	45	118577.8	B
40	South Africa	47208	-	-	D
41	Swaziland	1034	-	-	D
42	Togo	5988	38	157578.9	B
43	Uganda	27821	344	80875.0	A
44	United Republic of Tanzania	37627	175	215011.4	C
45	Zambia	11479	54	212574.1	C
46	Zimbabwe	12936	51	253647.1	C
	<b>Regional aggregate</b>	<b>721955</b>	<b>7253</b>	<b>99538.8</b>	<b>A</b>

**Map 3: Country- wise distribution of Ophthalmic allied personnel in Africa**





**Table 10: Gap analysis in relation to the number of Allied Personnel in Africa**

	Country	Total No. of Ophthalmic allied personnel	Current allied personnel: Population ratio	Category	Number of allied personnel required to maintain the target ratio of 1: 100,000
1	Algeria	-	-	D	324
2	Angola	41	377804.9	C	155
3	Benin	34	240500.0	C	82
4	Botswana	104	17009.6	A	
5	Burkina Faso	104	123288.5	B	129
6	Burundi	9	809111.1	C	73
7	Cameroon	10	1603800.0	C	161
8	Cape Verde	9	55000.0	A	
9	Central African Republic	14	284714.3	C	40
10	Chad	64	147625.0	B	95
11	Comoros	13	59769.2	A	
12	Congo	5	776600.0	C	39
13	Cote d'Ivoire	102	175215.7	B	179
14	Democratic Republic of Congo	617	90523.5	A	-
15	Equatorial Guinea	3	164000.0	B	5
16	Eritrea	61	69377.0	A	-
17	Ethiopia	183	413114.8	C	756
18	Gabon	-	-	D	14
19	Gambia	15	98533.3	A	
20	Ghana	1882	11511.2	A	-
21	Guinea	33	278848.5	C	93
22	Guinea-Bissau	19	81052.6	A	-

	Country	Total No. of Ophthalmic allied personnel	Current allied personnel: Population ratio	Category	Number of allied personnel required to maintain the target ratio of 1: 100,000
23	Kenya	161	207869.6	C	335
24	Lesotho	-	-	D	18
25	Liberia	12	270083.3	C	33
26	Madagascar	67	270343.3	C	182
27	Malawi	434	29050.7	A	
28	Mali	101	129940.6	B	132
29	Mauritania	-	-	D	30
30	Mauritius	92	13402.2	A	-
31	Mozambique	67	289910.4	C	195
32	Namibia	56	35875.0	A	-
33	Niger	36	374972.2	C	135
34	Nigeria	2070	62178.3	A	-
35	Rwanda	5	1776400.0	C	89
36	Sao Tome and Principe	3	51000.0	A	-
37	Senegal	105	108438.1	B	114
38	Seychelles	15	5333.3	A	-
39	Sierra Leone	45	118577.8	B	54
40	South Africa	-	-	D	473
41	Swaziland	-	-	D	11
42	Togo	38	157578.9	B	60
43	Uganda	344	80875.0	A	-
44	United Republic of Tanzania	175	215011.4	C	377
45	Zambia	54	212574.1	C	115
46	Zimbabwe	51	253647.1	C	130
	<b>Regional aggregate</b>	<b>7253</b>	<b>99538.8</b>	<b>A</b>	<b>-</b>

## 4.1.2. Americas

### 4.1.2.1. Ophthalmologist

The total number of ophthalmologists in the region is 45,700 with a population ratio of one ophthalmologist per 19,161 people. The overall category for the region was “A”. Twenty-one (60%) countries of the region were from the category A, while 11.42% belonged to category C.

As regards the presence of ophthalmologist, the regional summary for Americas is given in table 11 and details of all the countries in the region are summarized in table 12. Human resource availability for the ophthalmologist in the region is presented in map 4. The findings of gap analysis as regards the number of ophthalmologists in each country are summarized in table 13.

**Table 11: Regional Summary of Americas regarding the number of ophthalmologists**

Category	Defining criteria	Number of countries
A	1 per < 50,000 population	21
B	1 per $\geq 50,000$ to <100,000	9
C	1 per $\geq 100,000$	4
D	Data not available	1

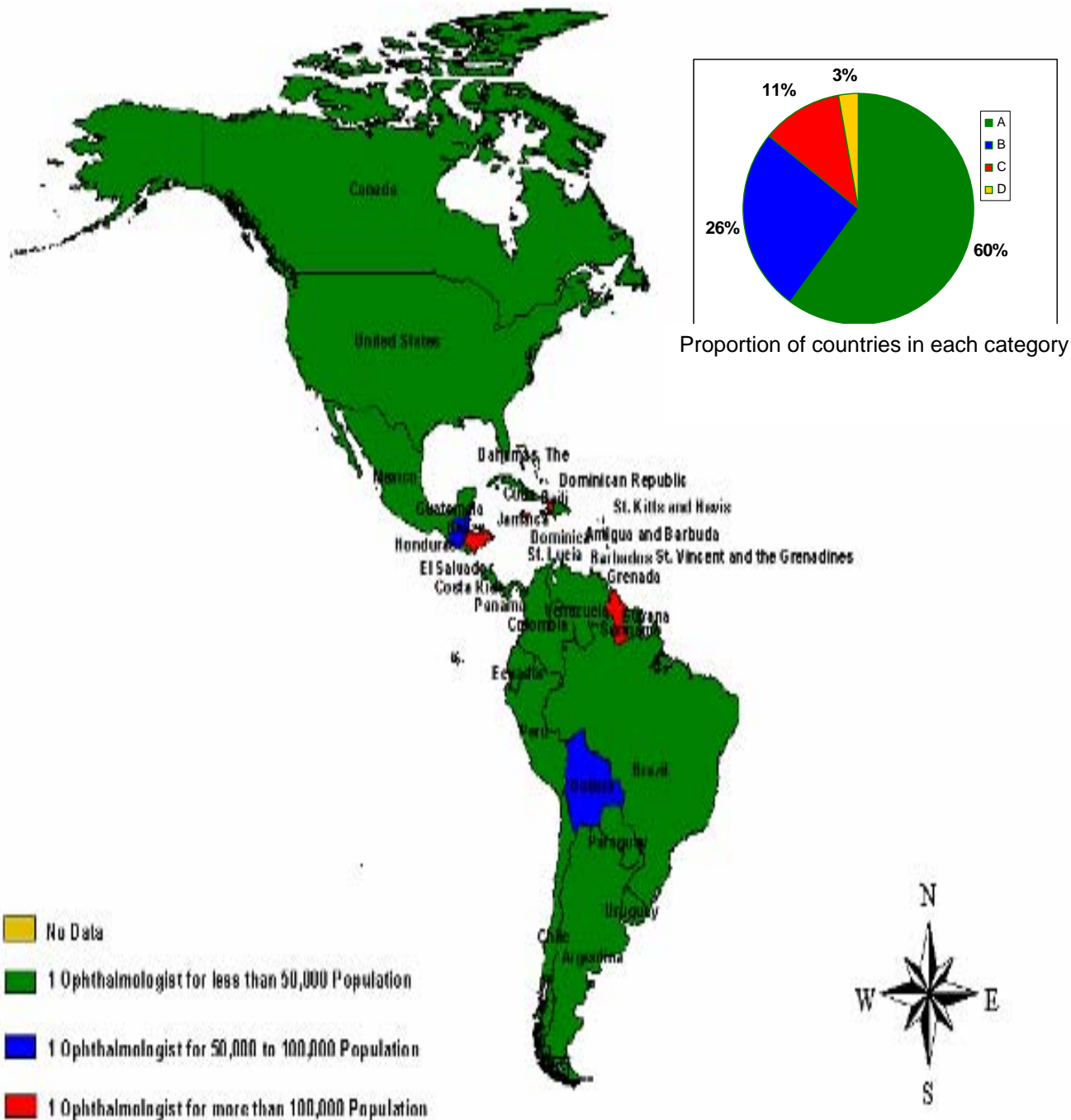
**Table 12: Country-wise distribution of ophthalmologists in Americas**

	Country	Population (000)	Total No. of ophthalmologists	Population Per Ophthalmologist	Category
1	Antigua and Barbuda	81	10	8100.0	A
2	Argentina	38372	3460	11090.2	A
3	Bahamas	319	6	53166.7	B
4	Barbados	269	10	26900.0	A
5	Belize	264	4	66000.0	B
6	Bolivia	9009	130	69300.0	B
7	Brazil	183913	11,350	16203.8	A
8	Canada	31958	800	39947.5	A
9	Chile	16124	790	20410.1	A
10	Colombia	44915	1260	35646.8	A
11	Costa Rica	4253	100	42530.0	A
12	Cuba	11245	620	18137.1	A
13	Dominica	79	1	79000.0	B
14	Dominican Republic	8768	220	39854.5	A
15	Ecuador	13040	340	38352.9	A
16	El Salvador	6762	136	49720.6	A
17	Grenada	102	1	102000.0	C
18	Guatemala	12295	151	81423.8	B
19	Guyana	750	5	150000.0	C
20	Haiti	8407	55	152854.5	C
21	Honduras	7048	60	117466.7	C
22	Jamaica	2639	43	61372.1	B
23	Mexico	105699	3400	31087.9	A
24	Nicaragua	5376	54	99555.6	B
25	Panama	3175	120	26458.3	A
26	Paraguay	6017	150	40113.3	A
27	Peru	27562	850	32425.9	A
28	Saint Kitts and Nevis	42	1	42000.0	A

	Country	Population (000)	Total No. of ophthalmologists	Population Per Ophthalmologist	Category
29	Saint Lucia	159	2	79500.0	B
30	Saint Vincent and the Grenadines	118	2	59000.0	B
31	Suriname	446	10	44600.0	A
32	Trinidad and Tobago	1301	-	-	D
33	USA	295410	20,439	14453.3	A
34	Uruguay	3439	220	15631.8	A
35	Venezuela	26282	900	29202.2	A
	<b>Regional aggregate</b>	<b>875638</b>	<b>45700</b>	<b>19160.6</b>	<b>A</b>

Map 4: Country- wise distribution of ophthalmologists in Americas

### Americas "Ophthalmologist"



**Table 13: Gap analysis in relation to the number of Ophthalmologists in Americas**

	<b>Country</b>	<b>Total No. of ophthalmologists</b>	<b>Current ophthalmologist: Population ratio</b>	<b>Category</b>	<b>Number of ophthalmologists required to maintain the target ratio of 1: 50,000</b>
1	Antigua and Barbuda	10	8100.0	A	-
2	Argentina	3460	11090.2	A	-
3	Bahamas	6	53166.7	B	7
4	Barbados	10	26900.0	A	-
5	Belize	4	66000.0	B	6
6	Bolivia	130	69300.0	B	181
7	Brazil	11,350	16203.8	A	-
8	Canada	800	39947.5	A	-
9	Chile	790	20410.1	A	-
10	Colombia	1260	35646.8	A	-
11	Costa Rica	100	42530.0	A	-
12	Cuba	620	18137.1	A	-
13	Dominica	1	79000.0	B	2
14	Dominican Republic	220	39854.5	A	-
15	Ecuador	340	38352.9	A	-
16	El Salvador	136	49720.6	A	-
17	Grenada	1	102000.0	C	3
18	Guatemala	151	81423.8	B	246
19	Guyana	5	150000.0	C	15
20	Haiti	55	152854.5	C	169
21	Honduras	60	117466.7	C	141
22	Jamaica	43	61372.1	B	53
23	Mexico	3400	31087.9	A	-
24	Nicaragua	54	99555.6	B	108
25	Panama	120	26458.3	A	-
26	Paraguay	150	40113.3	A	-

	Country	Total No. of ophthalmologists	Current Ophthalmologist: Population ratio	Category	Number of ophthalmologists required to maintain the target ratio of 1: 50,000
27	Peru	850	32425.9	A	-
28	Saint Kitts and Nevis	1	42000.0	A	-
29	Saint Lucia	2	79500.0	B	4
30	Saint Vincent and the Grenadines	2	59000.0	B	3
31	Suriname	10	44600.0	A	-
32	Trinidad and Tobago	-	-	D	27
33	USA	20,439	14453.3	A	-
34	Uruguay	220	15631.8	A	-
35	Venezuela	900	29202.2	A	-
	<b>Regional aggregate</b>	45700	1960.6	A	-

#### 4.1.2.2 Other cadres

Besides ophthalmologists no concrete information could be accessed regarding other cadres of eye care personnel including optometrists.



### 4.1.3. Eastern Mediterranean

#### 4.1.3.1 Ophthalmologists

The total number of ophthalmologists in EMR is 12,298 bringing the population ratio to one ophthalmologist per 42834 population. The data concerning number of ophthalmologists in each country was available for all the countries of the region. EMR as a whole was found to be in category A. However the information needs to be carefully interpreted as many of the EMR countries are going through a transitional phase of socioeconomic development. This has led to the emergence of a diverse situation as regards health generally and eye health specifically with impending problem of control and prevention of communicable diseases which have decreased in magnitude over the years but have not been eliminated and the growing incidence of chronic non-communicable diseases. This poses a dual problem in eye care provision as all public health interventions have to be designed in such a manner to address the two issues simultaneously. Therefore although most of the countries in the region meet the 1 ophthalmologist : 100,000 population criteria but this is a modest estimate and may not be sufficient to meet emerging regional needs of the population.

Regional summary for the distribution of ophthalmologists in EMR is provided in table 14 while details of all the countries in the region are summarized in table 15. The human resource availability in terms of ophthalmologists in the EMR is presented in map 5. The findings of gap analysis as regards the number of ophthalmologists in each country are summarized in table 16.

**Table 14: Regional Summary of EMR regarding the availability of ophthalmologists**

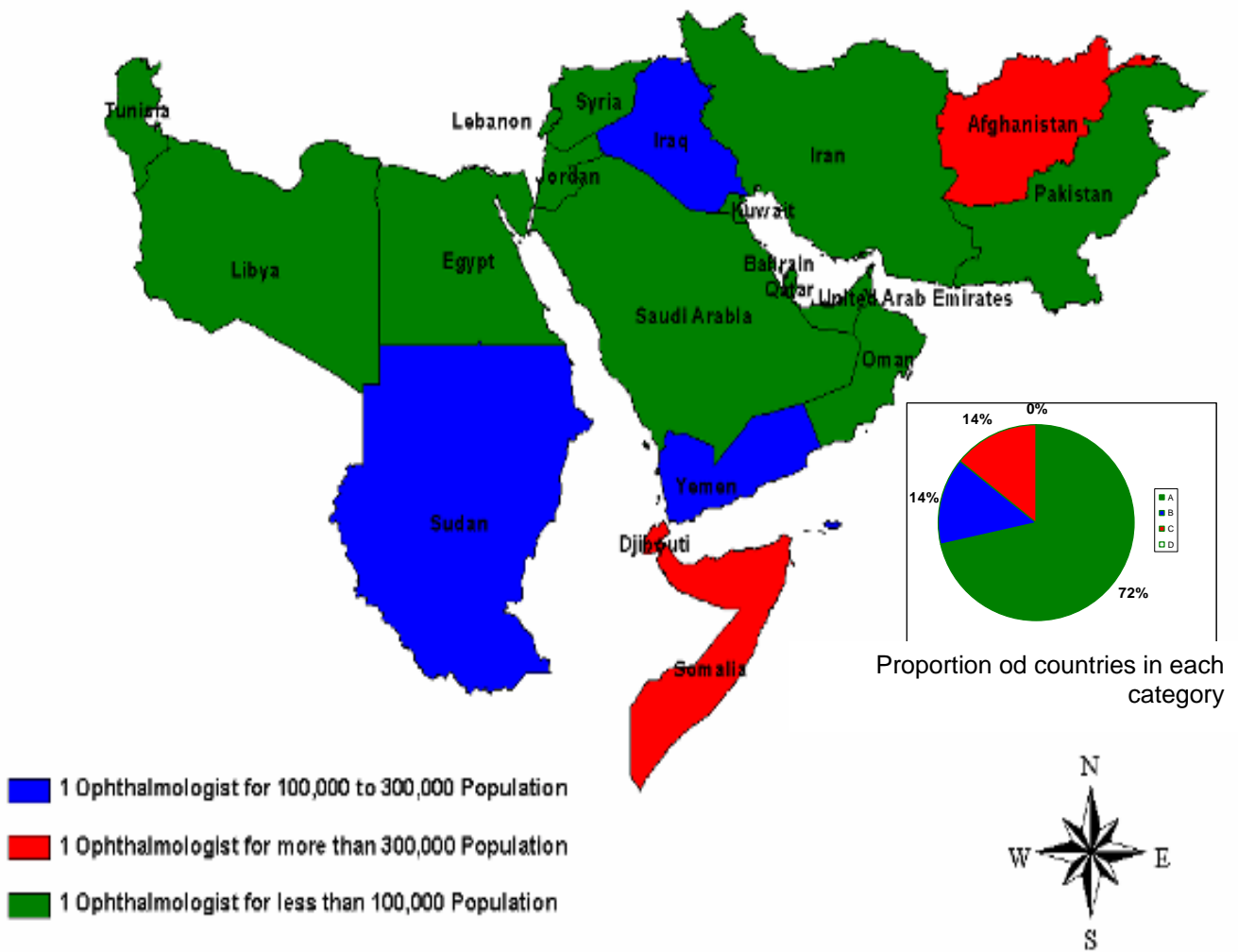
Category	Defining criteria	Number of countries
A	1 per <100,000 population	15
B	1 per >=100,000-300,000	3
C	1 per > =300,000	3
D	Data not available	0

**Table 15: Country-wise distribution of ophthalmologists in EMR**

	<b>Country</b>	<b>Population (000)</b>	<b>Total No. of ophthalmologists</b>	<b>Population Per Ophthalmologist</b>	<b>Category</b>
1	Afghanistan	28574	86	332255.8	C
2	Bahrain	716	36	19888.9	A
3	Djibouti	779	2	389500.0	C
4	Egypt	72642	5240	13863.0	A
5	Iran (Islamic Republic of)	68803	1230	55937.4	A
6	Iraq	28057	140	200407.1	B
7	Jordan	5561	231	24073.6	A
8	Kuwait	2606	72	36194.4	A
9	Lebanon	3540	219	16164.4	A
10	Libyan Arab Jamahiriya	5740	170	33764.7	A
11	Morocco	31020	1030	30116.5	A
12	Oman	2534	104	24365.4	A
13	Pakistan	154794	1860	83222.6	A
14	Qatar	777	32	24281.3	A
15	Saudi Arabia	23950	361	66343.5	A
16	Somalia	7964	3	2654666.7	C
17	Sudan	35523	133	267090.2	B
18	Syrian Arab Republic	18582	680	27326.5	A
19	Tunisia	9995	358	27919.0	A
20	United Arab Emirates	4284	108	39666.7	A
21	Yemen	20329	203	100142.9	B
	<b>Regional aggregate</b>	<b>526770</b>	<b>12298</b>	<b>42833.8</b>	<b>A</b>

Map 5: Country- wise distribution of ophthalmologists in EMR

### Eastern Mediterranean Region "Ophthalmologist"



**Table 16: Gap analysis in relation to the number of Ophthalmologists in EMR**

	Country	Total No. of ophthalmologists	Current ophthalmologist: Population ratio	Category	Number of ophthalmologists required to maintain the target ratio of 1: 100,000
1	Afghanistan	86	332255.8	C	286
2	Bahrain	36	19888.9	A	-
3	Djibouti	2	389500.0	C	8
4	Egypt	5240	13863.0	A	-
5	Iran (Islamic Republic of)	1230	55937.4	A	-
6	Iraq	140	200407.1	B	281
7	Jordan	231	24073.6	A	-
8	Kuwait	72	36194.4	A	-
9	Lebanon	219	16164.4	A	-
10	Libyan Arab Jamahiriya	170	33764.7	A	-
11	Morocco	1030	30116.5	A	-
12	Oman	104	24365.4	A	-
13	Pakistan	1860	83222.6	A	-
14	Qatar	32	24281.3	A	-
15	Saudi Arabia	361	66343.5	A	-
16	Somalia	3	2654666.7	C	80
17	Sudan	133	267090.2	B	356
18	Syrian Arab Republic	680	27326.5	A	-
19	Tunisia	358	27919.0	A	-
20	United Arab Emirates	108	39666.7	A	-
21	Yemen	203	100142.9	B	204
	<b>Regional aggregate</b>	<b>12298</b>	<b>42833.8</b>	<b>A</b>	<b>-</b>

### 4.1.3.2 Optometrists

The total number of optometrists in EMR amounts to 7369 with a population ratio of 1 optometrist per 71485 population. The overall category as regards the presence of optometrist in the region is category A. However there is a possibility that because of lack of standardized definitions for various cadres of eye care personnel the definition specified in the template for optometrist could not have been followed by the resource personnel while sending the data, therefore the given number could be an overestimation of the total number of optometrists in each country. Moreover data was not available for 9 ( 42%) countries of the region.

As regards the presence of optometrist, the regional summary for EMR is given in table 17 and details of all the countries in the region are summarized in table 18. Human resource availability for the cadre of optometrists in the region is presented in map 6. The findings of gap analysis regarding the number of optometrists in each country are summarized in table 19.

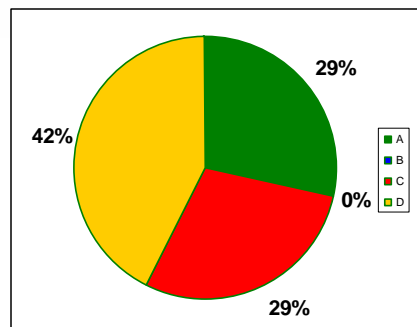
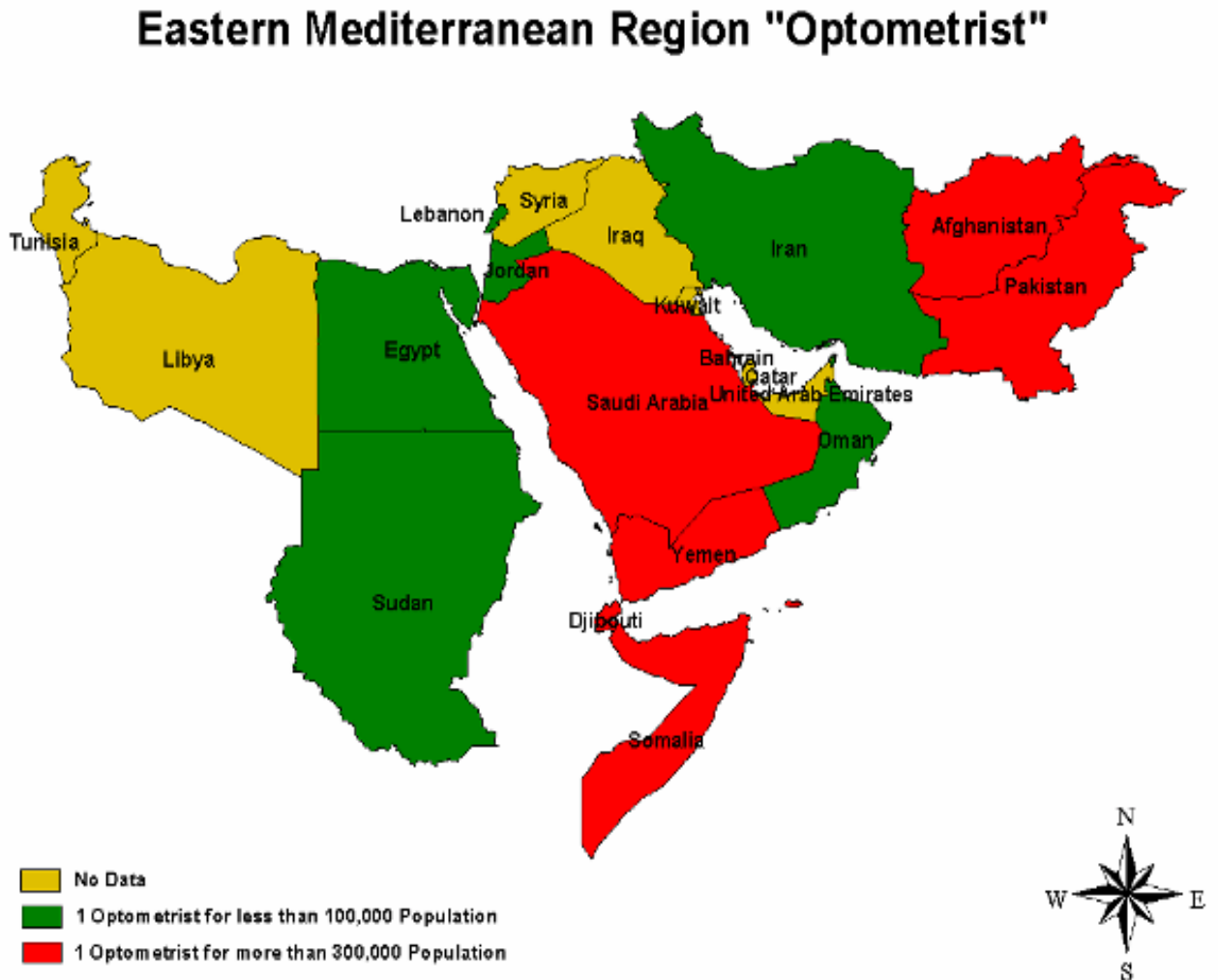
**Table 17: Regional Summary of EMR regarding the availability of optometrists**

Category	Defining criteria	Number of countries
A	1 per <100,000 population	6
B	1 per >=100,000-300,000	0
C	1 per > =300,000	6
D	Data not available	9

**Table 18: Country-wise distribution of optometrists in EMR**

	Country	Population (000)	Total No of Optometrists	Population per optometrist	Category
1	Afghanistan	28574	35	816400.0	C
2	Bahrain	716	-	-	D
3	Djibouti	779	1	779000.0	C
4	Egypt	72642	3643	19940.2	A
5	Iran (Islamic Republic of)	68803	819	84008.5	A
6	Iraq	28057	-	-	D
7	Jordan	5561	1500	3707.3	A
8	Kuwait	2606	-	-	D
9	Lebanon	3540	135	26222.2	A
10	Libyan Arab Jamahiriya	5740	-	-	D
11	Morocco	31020	-	-	D
12	Oman	2534	42	60333.3	A
13	Pakistan	154794	30	5159800.0	C
14	Qatar	777	-	-	D
15	Saudi Arabia	23950	60	399166.7	C
16	Somalia	7964	4	1991000.0	C
17	Sudan	35523	1065	33354.9	A
18	Syrian Arab Republic	18582	-	-	D
19	Tunisia	9995	-	-	D
20	United Arab Emirates	4284	-	-	D
21	Yemen	20329	35	580828.6	C
	<b>Regional aggregate</b>	<b>526770</b>	<b>7369</b>	<b>71484.6</b>	<b>A</b>

Map 6: Country-wise distribution of optometrists in EMR



Proportion of countries in each category

**Table 19: Gap analysis in relation to the number of optometrists in EMR**

	Country	Total No. of Optometrists	Current Optometrist: Population ratio	Category	Number of optometrists required to maintain the target ratio of 1:100,000
1	Afghanistan	35	816400.0	C	251
2	Bahrain	-	-	D	8
3	Djibouti	1	779000.0	C	7
4	Egypt	3643	19940.2	A	-
5	Iran (Islamic Republic of)	819	84008.5	A	-
6	Iraq	-	-	D	281
7	Jordan	1500	3707.3	A	-
8	Kuwait	-	-	D	27
9	Lebanon	135	26222.2	A	-
10	Libyan Arab Jamahiriya	-	-	D	58
11	Morocco	-	-	D	311
12	Oman	42	60333.3	A	-
13	Pakistan	30	5159800.0	C	1518
14	Qatar	-	-	D	8
15	Saudi Arabia	60	399166.7	C	180
16	Somalia	4	1991000.0	C	76
17	Sudan	1065	33354.9	A	-
18	Syrian Arab Republic	-	-	D	186
19	Tunisia	-	-	D	100
20	United Arab Emirates	-	-	D	43
21	Yemen	35	580828.6	C	169
	Regional aggregate	7369	71484.6	A	-



#### 4.1.3.3. Ophthalmic Allied Personnel

Regarding the availability of ophthalmic allied personnel, data was available for only 5 countries. The total number of allied personnel found in these countries was 1,330 with a population ratio of one allied person per 396,068 population. This placed the region with respect to the presence of allied personnel in the “C” category. This highlights not only the paucity of allied personnel but the mismatch between the number of ophthalmologists and the required number of allied personnel in the region.

The regional summary regarding situation concerning allied personnel is given in table 20 and details of all the countries in the region are summarized in table 21. The information is mapped in map 7. The findings of gap analysis as regards the number of allied personnel in each country are summarized in table 22.

**Table 20: Regional Summary of EMR regarding the availability of ophthalmic allied personnel**

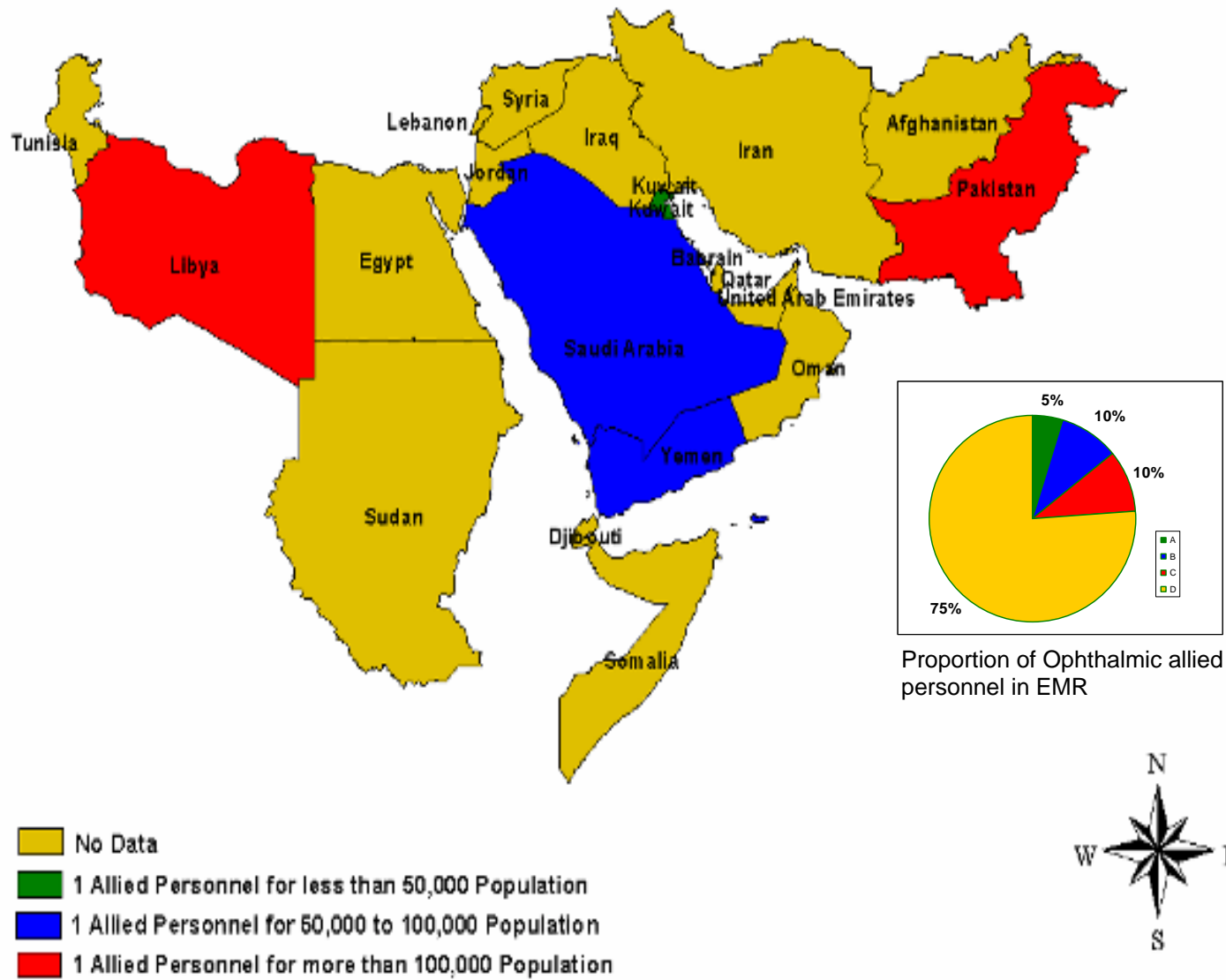
Category	Defining criteria	Number of countries
A	1 per <50,000 population	1
B	1 per >=50,000- <100,000	2
C	1 per >=100,000	2
D	Data not available	16

**Table 21: Country-wise distribution of ophthalmic allied personnel in EMR**

	Country	Population (000)	Total No of Allied Personnel's	Population per Allied Personnel	Category
1	Afghanistan	28574	-	-	D
2	Bahrain	716	-	-	D
3	Djibouti	779	-	-	D
4	Egypt	72642	-	-	D
5	Iran (Islamic Republic of)	68803	-	-	D
6	Iraq	28057	-	-	D
7	Jordan	5561	-	-	D
8	Kuwait	2606	204	12774.5098	A
9	Lebanon	3540	-	-	D
10	Libyan Arab Jamahiriya	5740	45	127555.5556	C
11	Morocco	31020	-	-	D
12	Oman	2534	-	-	D
13	Pakistan	154794	500	309588	C
14	Qatar	777	-	-	D
15	Saudi Arabia	23950	300	79833.33333	B
16	Somalia	7964	-	-	D
17	Sudan	35523	-	-	D
18	Syrian Arab Republic	18582	-	-	D
19	Tunisia	9995	-	-	D
20	United Arab Emirates	4284	-	-	D
21	Yemen	20329	281	72345.19573	B
	Regional aggregate	526770	1330	396067.6692	C

Map 7: Country- wise distribution of Ophthalmic allied personnel in EMR

### Eastern Mediterranean Region "Allied Personnel"



**Table 22: Gap analysis in relation to the number of Ophthalmic allied personnel in EMR**

	Country	Total No. of Ophthalmic allied personnel	Current allied person: Population ratio	Category	Number of allied personnel required to maintain the target ratio of 1: 50,000
1	Afghanistan	-	-	D	572
2	Bahrain	-	-	D	15
3	Djibouti	-	-	D	16
4	Egypt	-	-	D	1453
5	Iran (Islamic Republic of)	-	-	D	1377
6	Iraq	-	-	D	562
7	Jordan	-	-	D	112
8	Kuwait	204	12774.5098	A	-
9	Lebanon	-	-	D	71
10	Libyan Arab Jamahiriya	45	127555.5556	C	70
11	Morocco	-	-	D	621
12	Oman	-	-	D	51
13	Pakistan	500	309588	C	2596
14	Qatar	-	-	D	16
15	Saudi Arabia	300	79833.33333	B	179
16	Somalia	-	-	D	160
17	Sudan	-	-	D	711
18	Syrian Arab Republic	-	-	D	372
19	Tunisia	-	-	D	200
20	United Arab Emirates	-	-	D	86
21	Yemen	281	72345.19573	B	126
	<b>Regional aggregate</b>	<b>1330</b>	<b>396067.6692</b>	<b>C</b>	<b>9206</b>

## 4.1.4. Europe

### 4.1.4.1 Ophthalmologists

The data was available for only 42 countries in the region, from 11 countries the data could not be accessed. The total number of ophthalmologists in the region was found to be 42,647 with one ophthalmologist per 20,663 population. Forty –one countries of the region were categorized as in category A .No country was found to be in category C.

The regional summary regarding situation concerning ophthalmologists is given in table 23 and details of all the countries in the region are summarized in table24. The information is mapped in map 8. The findings of gap analysis as regards the number of ophthalmologists in each country are summarized in table 25.

**Table 23: Regional Summary of Europe regarding number of ophthalmologists**

Category	Defining criteria	Number of countries
A	1 per < 50,000 population	41
B	1 per >=50,000 to <100,000	1
C	1 per >= 100,000	0
D	Data not available	11

**Table 24: Country-wise distribution of ophthalmologists in Europe**

	<b>Country</b>	<b>Population (000)</b>	<b>Total No. of ophthalmologists</b>	<b>Population Per Ophthalmologist</b>	<b>Category</b>
1	Albania	3112	70	44457.1429	A
2	Andorra	67	-	-	D
3	Armenia	3026	180	16811.1111	A
4	Austria	8171	720	11348.6111	A
5	Azerbaijan	8355	200	41775	A
6	Belarus	9811	-	-	D
7	Belgium	10400	926	11231.1015	A
8	Bosnia and Herzegovina	3909	116	33698.2759	A
9	Bulgaria	7780	300	25933.3333	A
10	Croatia	4540	403	11265.5087	A
11	Cyprus	826	65	12707.6923	A
12	Czech Republic	10229	1024	9989.25781	A
13	Denmark	5414	350	15468.5714	A
14	Estonia	1335	126	10595.2381	A
15	Finland	5235	571	9168.12609	A
16	France	60257	-	-	D
17	Georgia	4518	116	38948.2759	A
18	Germany	82645	4543	18191.7235	A
19	Greece	11098	870	12756.3218	A
20	Hungary	10124	600	16873.3333	A
21	Iceland	292	-	-	D
22	Ireland	4080	170	24000	A
23	Israel	6601	650	10155.3846	A
24	Italy	58033	2300	25231.7391	A
25	Kazakhstan	14839	583	25452.8302	A
26	Kyrgyzstan	5204	260	20015.3846	A
27	Latvia	2318	251	9235.05976	A
28	Liechtenstein	-	-	-	D

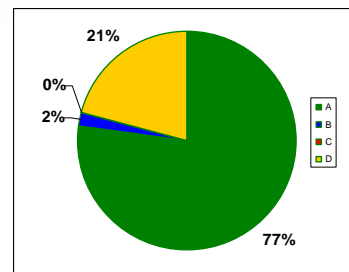
	<b>Country</b>	<b>Population (000)</b>	<b>Total No. of ophthalmologists</b>	<b>Population Per Ophthalmologist</b>	<b>Category</b>
29	Lithuania	3443	350	9837.14286	A
30	Luxembourg	459	-	-	D
31	Macedonia	2050.554	160	12815.9625	A
32	Malta	400	-	-	D
33	Monaco	35	-	-	D
34	Netherlands	16226	916	17713.9738	A
35	Norway	4598	-	-	D
36	Poland	38559	1700	22681.7647	A
37	Portugal	10441	734	14224.7956	A
38	Republic of Moldova	4218	-	-	D
39	Romania	21790	821	26540.8039	A
40	Russian Federation	143899	5270	27305.3131	A
41	San Marino	28	-	-	D
42	Serbia and Montenegro	10510	640	16421.875	A
43	Slovakia	5401	370	14597.2973	A
44	Slovenia	1967	158	12449.3671	A
45	Spain	42646	3305	12903.4796	A
46	Sweden	9008	740	12172.973	A
47	Switzerland	7240	758	9551.45119	A
48	Tajikistan	6430	77	83506.4935	B
49	Turkey	72220	2800	25792.8571	A
50	Turkmenistan	4766	120	39716.6667	A
51	Ukraine	46989	3080	15256.1688	A
52	United Kingdom	59479	3200	18587.1875	A
53	Uzbekistan	26209	2054	12759.9805	A
	<b>Regional aggregate</b>	<b>881230.55</b>	<b>42647</b>	<b>20663.4</b>	<b>A</b>

Map 8: Country –wise distribution of ophthalmologists in Europe

# Europe "Ophthalmologist"



- No Data
- 1 Ophthalmologist for less than 50,000 Population
- 1 Ophthalmologist for 50,000 to 100,000 Population



Proportion of countries in each category



**Table 25: Gap analysis in relation to the number of Ophthalmologists in Europe**

	Country	Total No. of ophthalmologists	Current ophthalmologist: Population ratio	Category	Number of ophthalmologists required to maintain the target ratio of 1: 50,000
1	Albania	70	44457.1	A	-
2	Andorra	-	-	D	2
3	Armenia	180	16811.1	A	-
4	Austria	720	11348.6	A	-
5	Azerbaijan	200	41775.0	A	-
6	Belarus	-	-	D	197
7	Belgium	926	11231.1	A	-
8	Bosnia and Herzegovina	116	33698.3	A	-
9	Bulgaria	300	25933.3	A	-
10	Croatia	403	11265.5	A	-
11	Cyprus	65	12707.7	A	-
12	Czech Republic	1024	9989.3	A	-
13	Denmark	350	15468.6	A	-
14	Estonia	126	10595.2	A	-
15	Finland	571	9168.1	A	-
16	France	-	-	D	1206
17	Georgia	116	38948.3	A	-
18	Germany	4543	18191.7	A	-
19	Greece	870	12756.3	A	-
20	Hungary	600	16873.3	A	-
21	Iceland	-	-	D	6
22	Ireland	170	24000.0	A	-
23	Israel	650	10155.4	A	-
24	Italy	2300	25231.7	A	-
25	Kazakhstan	583	25452.8	A	-
26	Kyrgyzstan	260	20015.4	A	-

	Country	Total No. of ophthalmologists	Current ophthalmologist: Population ratio	Category	Number of ophthalmologists required to maintain the target ratio of 1: 50,000
27	Latvia	251	9235.1	A	-
28	Liechtenstein	-	-	D	-
29	Lithuania	350	9837.1	A	-
30	Luxembourg	-	-	D	10
31	Macedonia	160	12816.0	A	-
32	Malta	-	-	D	8
33	Monaco	-	-	D	1
34	Netherlands	916	17714.0	A	-
35	Norway	-	-	D	92
36	Poland	1700	22681.8	A	-
37	Portugal	734	14224.8	A	-
38	Republic of Moldova	-	-	D	85
39	Romania	821	26540.8	A	-
40	Russian Federation	5270	27305.3	A	-
41	San Marino	-	-	D	1
42	Serbia and Montenegro	640	16421.9	A	-
43	Slovakia	370	14597.3	A	-
44	Slovenia	158	12449.4	A	-
45	Spain	3305	12903.5	A	-
46	Sweden	740	12173.0	A	-
47	Switzerland	758	9551.5	A	-
48	Tajikistan	77	83506.5	B	129
49	Turkey	2800	25792.9	A	-
50	Turkmenistan	120	39716.7	A	-
51	Ukraine	3080	15256.2	A	-
52	United Kingdom	3200	18587.2	A	-
53	Uzbekistan	2054	12760.0	A	-
	<b>Regional aggregate</b>	<b>42647</b>	<b>20663.4</b>	<b>A</b>	<b>-</b>

**4.1.4.2. Other eye care personnel**

Reliable data concerning other cadres of eye care personnel including optometrists was not available for the region therefore no further analysis could be done in this respect.

## 4.1.5. South-East Asia

### 4.1.5. South-East Asia

#### 4.1.5.1. Ophthalmologists

The data was available for 9 countries(81.81%) of the region. The information about only two countries was not available. The total number of ophthalmologists in the region was 13,348 with one ophthalmologist per 122, 339 population. Therefore the region was placed in “B” category. There were 3 (27.27%) countries in each of the categories of A, B and C.

As regards the presence of ophthalmologists, the regional summary for South-East Asia is given in table 26 and details of all the countries in the region are summarized in table 27. Human resource availability for the cadre of ophthalmologist in the region is presented in map 9. The findings of gap analysis regarding the number of ophthalmologists in each country are summarized in table 28.

**Table 26:- Regional Summary of South-East Asia regarding the availability of ophthalmologists**

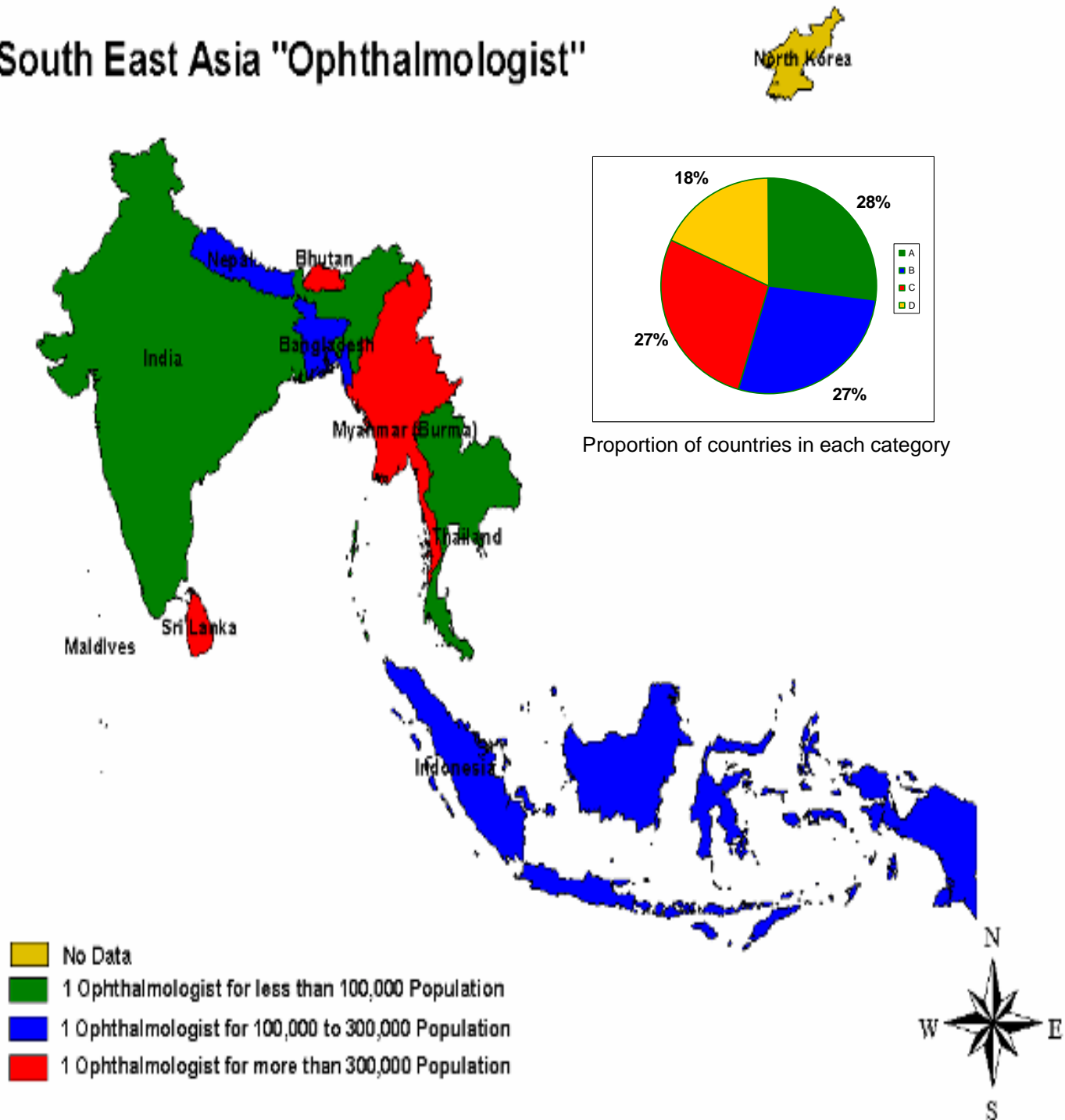
Category	Defining criteria	Number of countries
A	1 per <100,000 population	3
B	1 per >=100,000-300,000	3
C	1 per > =300,000	3
D	Data not available	2

**Table 26: Country – wise distribution of ophthalmologists in South-East Asia**

	Country	Population (000)	Total No. of ophthalmologists	Population per Ophthalmologist	Category
1	Bangladesh	139215	626	222388.2	B
2	Bhutan	2116	3	705333.3	C
3	India	1087124	11,000	98829.5	A
4	Indonesia	220077	750	293436.0	B
5	Democratic People's republic of Korea	22384	-	-	D
6	Maldives	321	6	53500.0	A
7	Myanmar	50004	166	301228.9	C
8	Nepal	26591	110	241736.4	B
9	Sri Lanka	20570	40	514250.0	C
10	Thailand	63694	647	98445.1	A
11	Timor L'este (East Timor)	887	-	-	D
	<b>Regional aggregate</b>	<b>1632983</b>	<b>13348</b>	<b>122339.2</b>	<b>B</b>

**Map 9: Country-wise distribution of ophthalmologists in SEA**

## South East Asia "Ophthalmologist"



**Table 28: Gap analysis in relation to the number of Ophthalmologist in SEA**

	Country	Total No. of ophthalmologists	Current ophthalmologist: Population ratio	Category	Number of ophthalmologists required to maintain the target ratio of 1:100,000 population
1	Bangladesh	626	222388.2	B	1393
2	Bhutan	3	705333.3	C	22
3	India	11,000	98829.5	A	10872
4	Indonesia	750	293436.0	B	2201
5	Democratic People's republic of Korea	-	-	D	224
6	Maldives	6	53500.0	A	4
7	Myanmar	166	301228.9	C	501
8	Nepal	110	241736.4	B	266
9	Sri Lanka	40	514250.0	C	206
10	Thailand	647	98445.1	A	637
11	Timor L'este (East Timor)	-	-	D	9
	<b>Regional aggregate</b>	<b>13348</b>	<b>122339.2</b>	<b>B</b>	<b>16330</b>

#### 4.1.5.2. Optometrists

Regarding the data concerning optometrists, no reliable details could be accessed therefore further analysis was not possible.

#### 4.1.5.3. Ophthalmic allied personnel

Data concerning the availability of ophthalmic allied personnel was available for 9 (81.81%) of the 11 countries in the region. The overall population ratio was one ophthalmic allied person per 78,111 population, placing SEA in the B category. Most of the countries (6, 55%) belonged to the category B, 3 countries were found to be in the C category while none in the A category.

As regards the presence of ophthalmic allied personnel, the regional summary for SEA is given in table 29 and details of all the countries in the region are

summarized in table 30. Human resource availability for the cadre of allied personnel in the region is presented in map 10. The findings of gap analysis regarding the number of ophthalmic allied personnel in each country are summarized in table 31.

**Table29: Regional Summary of South-East Asia regarding the availability of Ophthalmic allied personnel**

Category	Defining criteria	Number of countries
A	1 per < 50,000 population	0
B	1 per >=50,000 to <100,000	6
C	1 per >= 100,000	3
D	Data not available	2

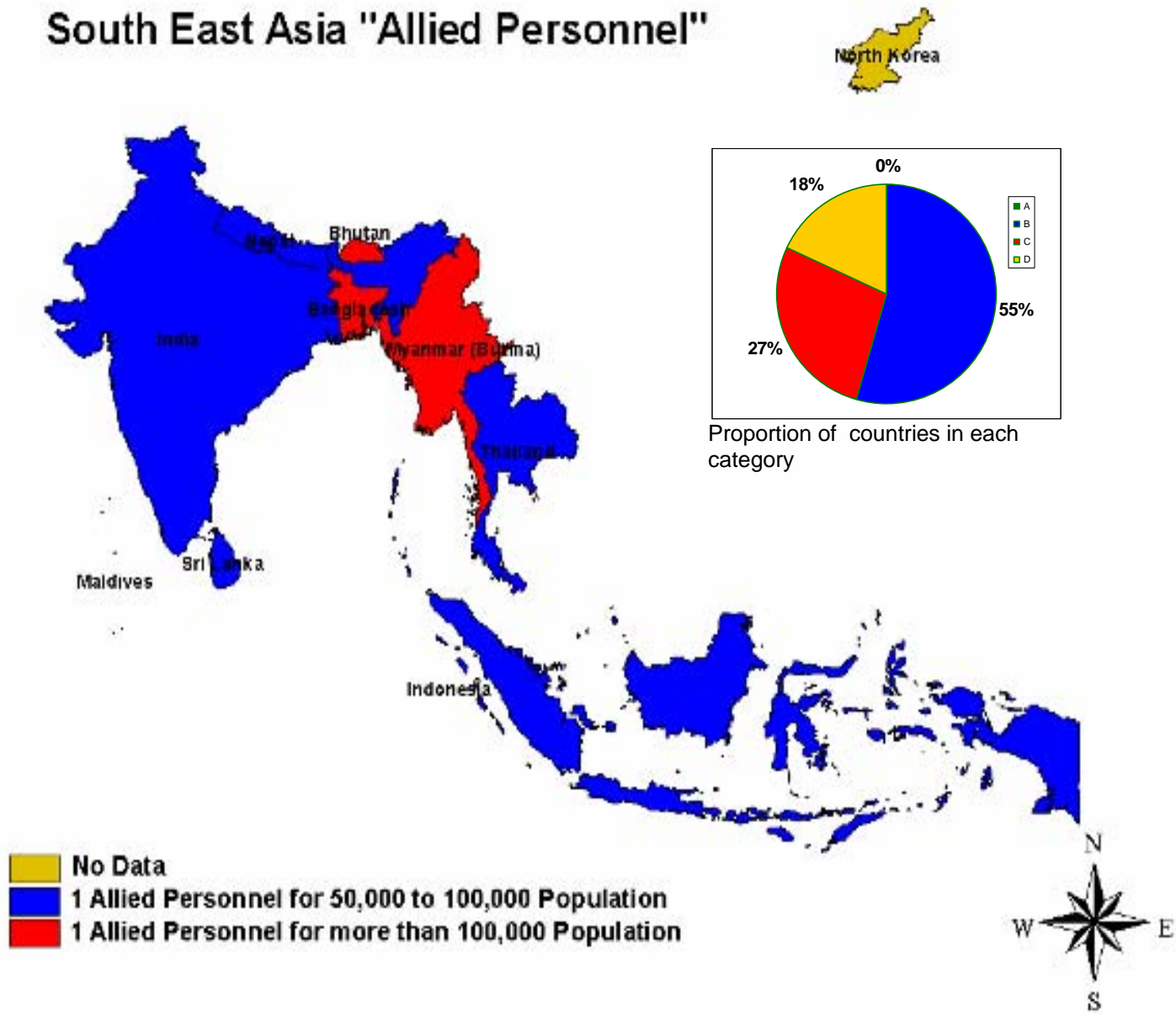


**Table 30: Country-wise distribution of ophthalmic allied personnel SEA**

	Country	Population (000)	No of Allied Personnel	Population per allied	Category
1	Bangladesh	139215	471	295573.2	C
2	Bhutan	2116	19	111368.4	C
3	India	1087124	15,000	72474.9	B
4	Indonesia	220077	3600	61132.5	B
5	Democratic People's republic of Korea	22384	-	-	D
6	Maldives	321	5	64200.0	B
7	Myanmar	50004	200	250020.0	C
8	Nepal	26591	450	59091.1	B
9	Sri Lanka	20570	290	70931.0	B
10	Thailand	63694	871	73127.4	B
11	Timor L'este (East Timor)	887	-	-	D
	<b>Regional aggregate</b>	<b>1632983</b>	<b>20906</b>	<b>78110.7</b>	<b>B</b>

**Map 10: Country-wise distribution of Ophthalmic allied personnel in South –East Asia**

**South East Asia "Allied Personnel"**



**Table 31: Gap analysis in relation to the number of ophthalmic allied personnel in SEA**

	Country	Total No. of Ophthalmic allied personnel	Current allied personnel: Population ratio	Category	Number of allied personnel required to maintain the target ratio of 1: 100,000
1	Bangladesh	471	295573.2	C	2785
2	Bhutan	19	111368.4	C	43
3	India	15,000	72474.9	B	21743
4	Indonesia	3600	61132.5	B	4402
5	Democratic People's republic of Korea	-	-	D	448
6	Maldives	5	64200.0	B	7
7	Myanmar	200	250020.0	C	1001
8	Nepal	450	59091.1	B	532
9	Sri Lanka	290	70931.0	B	412
10	Thailand	871	73127.4	B	1274
11	Timor L'este (East Timor)	-	-	D	18
	<b>Regional aggregate</b>	<b>20906</b>	<b>78110.7</b>	<b>B</b>	<b>32660</b>

## 4.1.6. Western Pacific

### 4.1.6.1. Ophthalmologists

The information concerning ophthalmologists was available for 13 (46%) countries of WPR, data was not available for further analysis for 8 (29%) countries. The total number of ophthalmologists in the region was 42,158 with one ophthalmologist per 41,803 people. Hence the region was placed in A category. Almost half of the countries ( 13, 46%) belonged to A category.

As regards the presence of ophthalmologists, the regional summary for WPR is given in table 32 and details of all the countries in the region are summarized in table 33. Human resource availability for the cadre of ophthalmologist in the region is presented in map 11. The findings of gap analysis regarding the number of ophthalmologists in each country are summarized in table 34.

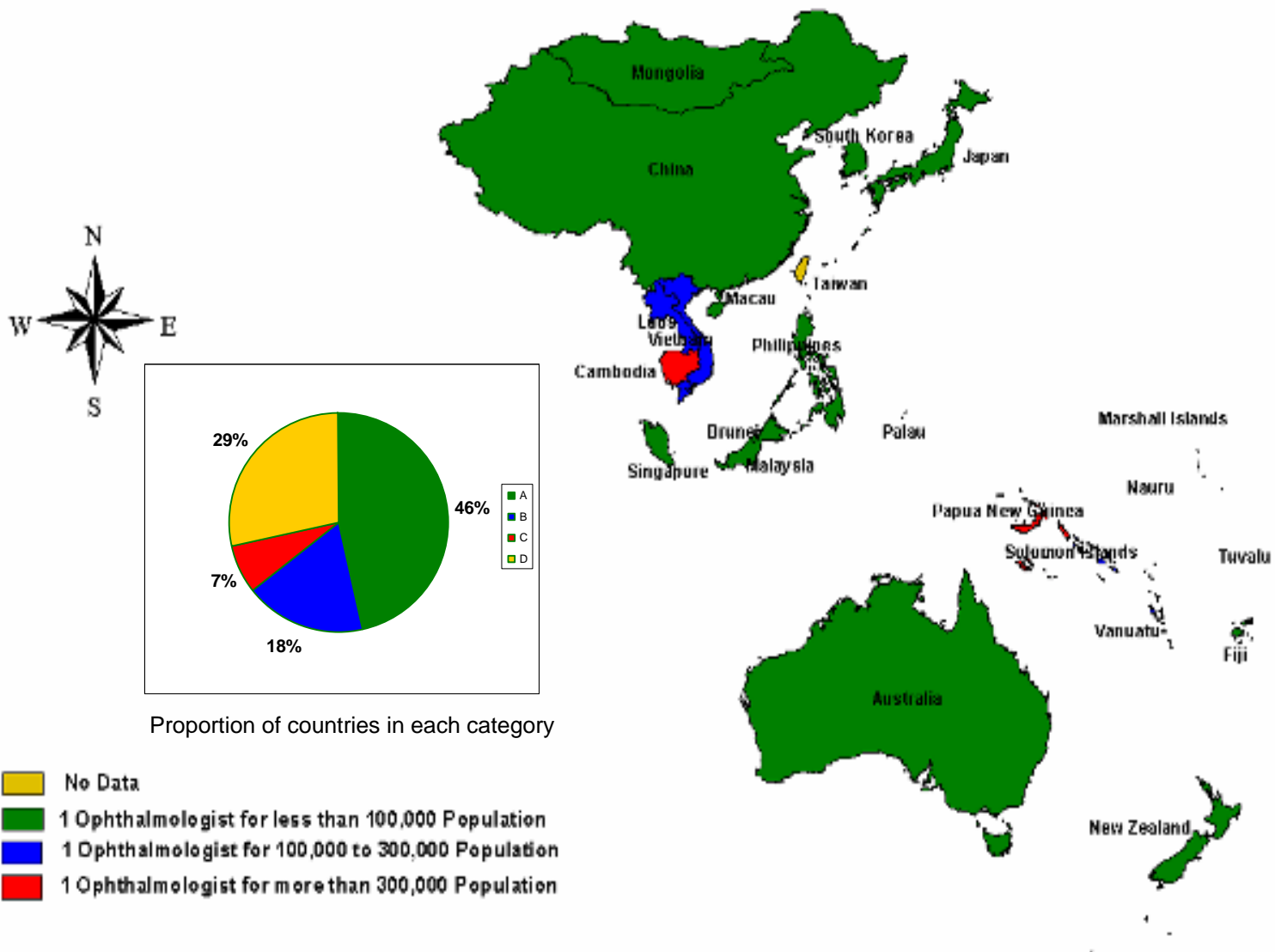
**Table 32: Regional Summary of WPR regarding the availability of ophthalmologists**

Category	Defining criteria	Number of countries
A	1 per <100,000 population	13
B	1 per $\geq$ 100,000-300,000	5
C	1 per $\geq$ 300,000	2
D	Data not available	8

**Table 33: Country-wise distribution of ophthalmologists in WPR**

	Country	Population (000)	No. of ophthalmologists	Ophthalmol Per population	Category
1	Australia	19942	895	22281.6	A
2	Brunei Darussalam	366	10	36600	A
3	Cambodia	13798	32	431188	C
4	China, Hong Kong and Macao	1315409	22,100	59520.8	A
5	Cook Islands (N.Z.)	18	-	-	D
6	Fiji	841	12	70083.3	A
7	Japan	127923	13,413	9537.24	A
8	Kiribati	97	-	-	D
9	Republic of Korea (South Korea)	47645	2026	23516.8	A
10	Lao People's Democratic Republic	5792	22	263273	B
11	Malaysia	24894	294	84673.5	A
12	Marshall Islands	60	-	-	D
13	Micronesia	110	-	-	D
14	Mongolia	2614	97	26948.5	A
15	Nauru	13	-	-	D
16	New Zealand	3989	104	38355.8	A
17	Niue (N.Z.) (washed out)	-	-	-	D
18	Palau	20	-	-	D
19	Papua New Guinea	5772	9	641333	C
20	Philippines	81617	1467	55635.3	A
21	Samoa	184	2	92000	A
22	Singapore	4273	131	32618.3	A
23	Solomon Islands	466	2	233000	B
24	Taiwan	23036	1040	22150.1	A
25	Tonga	102	1	102000	B
26	Tuvalu	10	-	-	D
27	Vanuatu	207	1	207000	B
28	Vietnam	83123	500	166246	B
	<b>Regional aggregate</b>	<b>1739285</b>	<b>42158</b>	<b>41256.35</b>	<b>A</b>

## Western Pacific "Ophthalmologist"



**Table 34: Gap analysis in relation to the number of Ophthalmologists in WPR**

	Country	Total No. of Ophthalmol.	Current Ophthalmol: Population ratio	Category	Number of Ophthalmol. required to maintain the target ratio of 1: 100,000
1	Australia	895	22281.6	A	-
2	Brunei Darussalam	10	36600	A	-
3	Cambodia	32	431188	C	137.980
4	China, Hong Kong and Macao	22,100	59520.8	A	-
5	Cook Islands (N.Z.)	-	-	D	0.180
6	Fiji	12	70083.3	A	-
7	Japan	13,413	9537.24	A	-
8	Kiribati	-	-	D	0.970
9	Republic of Korea (South Korea)	2026	23516.8	A	-
10	Lao People's Democratic Republic	22	263273	B	57.920
11	Malaysia	294	84673.5	A	-
12	Marshall Islands	-	-	D	0.600
13	Micronesia	-	-	D	1.100
14	Mongolia	97	26948.5	A	-
15	Nauru	-	-	D	0.130
16	New Zealand	104	38355.8	A	-
17	Niue (N.Z) (washed out)	-	-	D	-
18	Palau	-	-	D	0.200
19	Papua New Guinea	9	641333	C	57.720
20	Philippines	1467	55635.3	A	-
21	Samoa	2	92000	A	-
22	Singapore	131	32618.3	A	-

	Country	Total No. of Ophthalmol.	Current Ophthalmol: Population ratio	Category	Number of Ophthalmol. required to maintain the target ratio of 1: 100,000
23	Solomon Islands	2	233000	B	4.660
24	Taiwan	1040	-	D	-
25	Tonga	1	102000	B	1.020
26	Tuvalu	-	-	D	0.100
27	Vanuatu	1	207000	B	2.070
28	Vietnam	500	166246	B	831.230
	Regional aggregate	42158	41256.35	A	-

#### 4.1.6.2. Optometrists

The data concerning optometrists was available for only 5 (18%) countries of WPR, while it was not available for analysis for the rest of the 23 (82%) countries. The total number of optometrists in the countries for which the data could be accessed was 4039 with one optometrist per 430,623 population hence WPR was placed in the C category. However the data is too insufficient to be of any significance.

As regards the presence of optometrists, the regional summary for WPR is given in table 35 and details of all the countries in the region are summarized in table 36. Human resource availability for the cadre of optometrists in the region is presented in map 12. The findings of gap analysis regarding the number of optometrists in each country are summarized in table 37.

**Table35: Regional Summary of WPR regarding the availability of optometrist**

Category	Defining criteria	Number of countries
A	1 per <100,000 population	2
B	1 per >=100,000-300,000	2
C	1 per > =300,000	1
D	Data not available	23



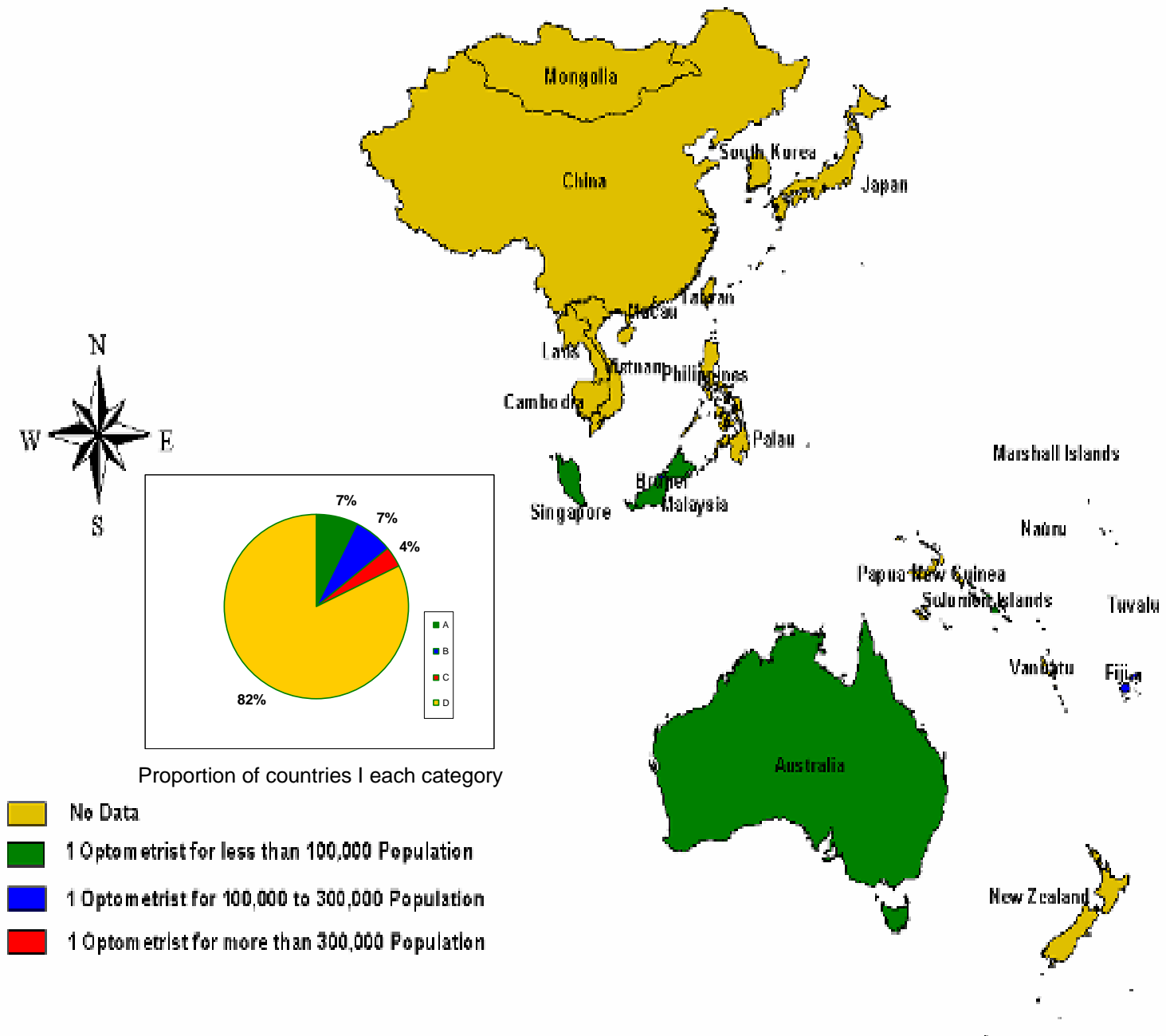
**Table 35: Country-wise distribution of optometrists in WPR**

	<b>Country</b>	<b>Population (000)</b>	<b>Total No. of Optometrists</b>	<b>Population per optometrist</b>	<b>Category</b>
1	Australia	19942	3500	5697.71429	A
2	Brunei Darussalam	366	2	183000	B
3	Cambodia	13798	-	-	D
4	China, Hong Kong and Macao	1315409	-	-	D
5	Cook Islands (N.Z.)	18	-	-	D
6	Fiji	841	7	120142.857	B
7	Japan	127923	-	-	D
8	Kiribati	97	-	-	D
9	Republic of Korea (South Korea)	47645	-	-	D
10	Lao People's Democratic Republic	5792	-	-	D
11	Malaysia	24894	529	47058.6011	A
12	Marshall Islands	60	-	-	D
13	Micronesia	110	-	-	D
14	Mongolia	2614	-	-	D
15	Nauru	13	-	-	D
16	New Zealand	3989	-	-	D
17	Niue (N.Z) (washed out)		-	-	D
18	Palau	20	-	-	D
19	Papua New Guinea	5772	-	-	D
20	Philippines	81617	-	-	D
21	Samoa	184	-	-	D
22	Singapore	4273	-	-	D
23	Solomon Islands	466	1	466000	C
24	Taiwan	-	-	-	D

	Country	Population (000)	Total No. of Optometrists	Population per optometrist	Category
25	Tonga	102	-	-	D
26	Tuvalu	10	-	-	D
27	Vanuatu	207	-	-	D
28	Vietnam	83123	-	-	D
	<b>Regional aggregate</b>	<b>1739285</b>	<b>4039</b>	<b>430622.679</b>	<b>C</b>

Map 12: Country-wise distribution of optometrists in WPR

## Western Pacific "Optometrist"



**Table 36 : Gap analysis in relation to the number of Optometrist in WPR**

	Country	Total No. of Optomet.	Current Optomet: Population ratio	Category	Number of Optomet. required to maintain the target ratio of 1: 100,000
1	Australia	3500	5697.71429	A	-
2	Brunei Darussalam	2	183000	B	3.660
3	Cambodia	-	-	D	137.980
4	China, Hong Kong and Macao	-	-	D	13154.090
5	Cook Islands (N.Z.)	-	-	D	0.180
6	Fiji	7	120142.857	B	8.410
7	Japan	-	-	D	1279.230
8	Kiribati	-	-	D	0.970
9	Republic of Korea (South Korea)	-	-	D	476.450
10	Lao People's Democratic Republic	-	-	D	57.920
11	Malaysia	529	47058.6011	A	-
12	Marshall Islands	-	-	D	0.600
13	Micronesia	-	-	D	1.100
14	Mongolia	-	-	D	26.140
15	Nauru	-	-	D	0.130
16	New Zealand	-	-	D	39.890
17	Niue (N.Z) (washed out)	-	-	D	-
18	Palau	-	-	D	0.200
19	Papua New Guinea	-	-	D	57.720
20	Philippines	-	-	D	816.170
21	Samoa	-	-	D	1.840
22	Singapore	-	-	D	42.730
23	Solomon Islands	1	466000	C	4.660
24	Taiwan	-	-	D	0.000

	Country	Total No. of Optomet.	Current Optomet: Population ratio	Category	Number of Optomet. required to maintain the target ratio of 1: 100,000
25	Tonga	-	-	D	1.020
26	Tuvalu	-	-	D	0.100
27	Vanuatu	-	-	D	2.070
28	Vietnam	-	-	D	831.230
	Regional aggregate	4039	430622.679	C	17392.850

#### 4.1.6.3. Ophthalmic Allied Personnel

Data was available for only 12 (43%) of the 28 countries hence any meaningful analysis was not possible however preliminary analysis of the available information is presented. There were a total of 21,431 allied personnel in the region with one allied person per 81,157 population, placing the region in the B category. Most of the countries for which the data was available was found to be in the A category i.e. 10 (83%) out of the 12 countries.

As regards the presence of ophthalmic allied personnel, the regional summary for WPR is given in table 38 and details of all the countries in the region are summarized in table 39. Human resource availability for the cadre of allied personnel in the region is illustrated in map 13. The findings of gap analysis regarding the number of allied personnel in each country are summarized in table 40.

**Table 38: Regional Summary of WPR regarding the availability of allied personnel**

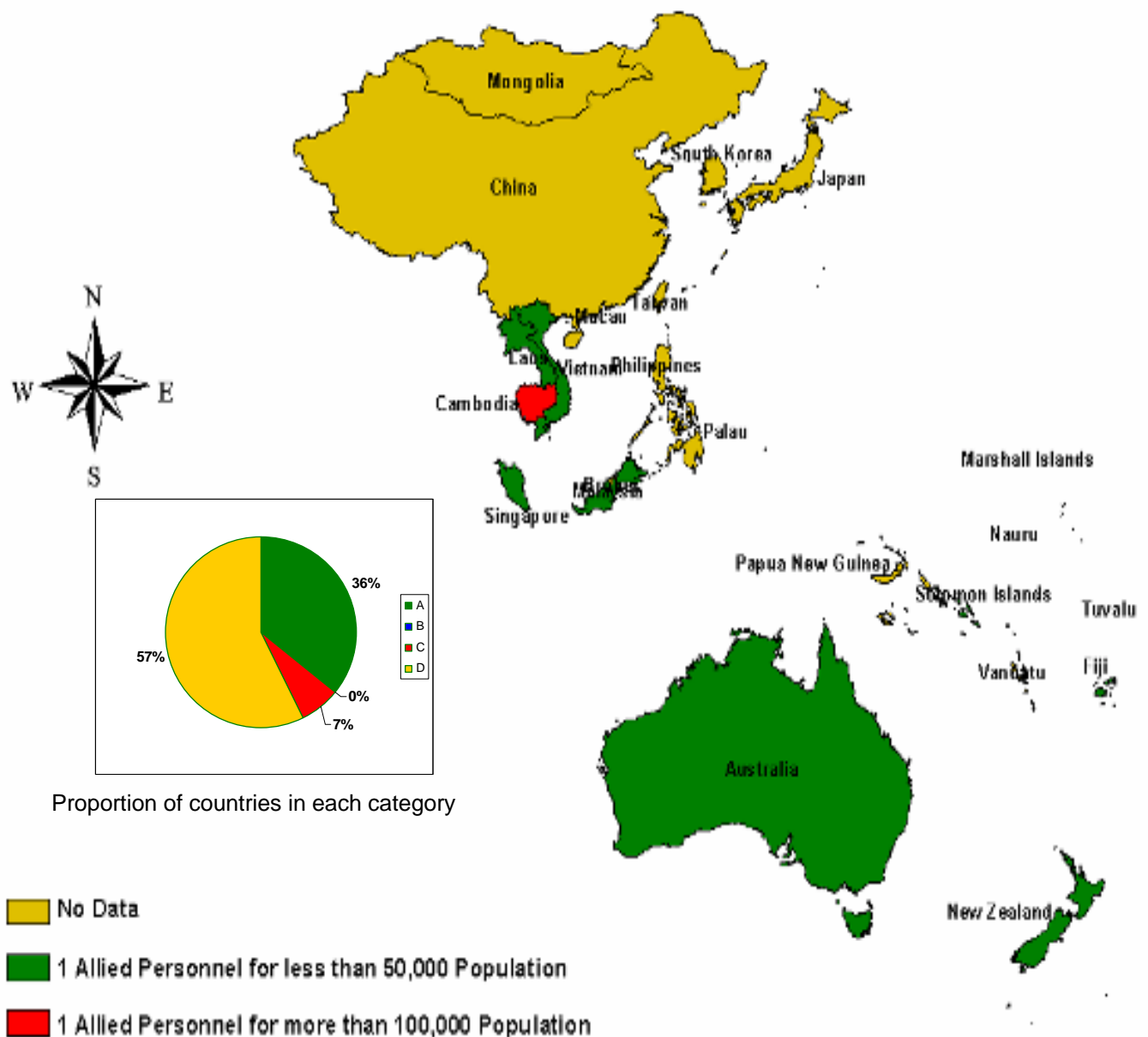
Category	Defining criteria	Number of countries
A	1 per < 50,000 population	10
B	1 per $\geq$ 50,000 to <100,000	0
C	1 per $\geq$ 100,000	2
D	Data not available	16

**Table 39: Country-wise distribution of Ophthalmic allied personnel in WPR**

	Country	Population (000)	Total No. of allied personnel	Population per allied person	Category
1	Australia	19942	850	23461.2	A
2	Brunei Darussalam	366	-	-	D
3	Cambodia	13798	68	202911.8	C
4	China, Hong Kong and Macao	1315409	-	-	D
5	Cook Islands (N.Z.)	18			D
6	Fiji	841	22	38227.3	A
7	Japan	127923	-	-	D
8	Kiribati	97	-	-	D
9	Republic of Korea (South Korea)	47645	-	-	D
10	Lao People's Democratic Republic	5792	200	28960.0	A
11	Malaysia	24894	2650	9394.0	A
12	Marshall Islands	60	-	-	D
13	Micronesia	110	-	-	D
14	Mongolia	2614	-	-	D
15	Nauru	13	-	-	D
16	New Zealand	3989	520	7671.2	A
17	Niue (N.Z) (washed out)	-	-	-	D
18	Palau	20	-	-	D
19	Papua New Guinea	5772	-	-	D
20	Philippines	81617	-	-	D
21	Samoa	184	1	184000.0	C
22	Singapore	4273	-	-	D
23	Solomon Islands	466	24	19416.7	A
24	Taiwan	-	-	-	D
25	Tonga	102	3	34000.0	A
26	Tuvalu	10	1	10000.0	A
27	Vanuatu	207	11	18818.2	A
28	Vietnam	83123	17081	4866.4	A
	<b>Regional aggregate</b>	<b>1739285</b>	<b>21431</b>	<b>81157.4</b>	<b>B</b>

**Map 13: Country- wise distribution of Ophthalmic allied personnel in WPR**

## Western Pacific "Allied Personnel"



**Table 40: Gap analysis in relation to the number of allied personnel in WPR**

	Country	Total No. of Allied personnel	Current allied personnel: Population ratio	Category	Number of allied personnel required to maintain the target ratio of 1: 50,000
1	Australia	850	23461.2	A	-
2	Brunei Darussalam			D	8
3	Cambodia	68	202911.8	C	276
4	China, Hong Kong and Macao	-	-	D	26309
5	Cook Islands (N.Z.)			D	1
6	Fiji	22	38227.3	A	17
7	Japan	-	-	D	2559
8	Kiribati	-	-	D	2
9	Republic of Korea (South Korea)	-	-	D	953
10	Lao People's Democratic Republic	200	28960.0	A	116
11	Malaysia	2650	9394.0	A	498
12	Marshall Islands	-	-	D	2
13	Micronesia	-	-	D	3
14	Mongolia	-	-	D	53
15	Nauru	-	-	D	1
16	New Zealand	520	7671.2	A	80
17	Niue (N.Z) (washed out)	-	-	D	-
18	Palau	-	-	D	1
19	Papua New Guinea	-	-	D	116
20	Philippines	-	-	D	1633
21	Samoa	1	184000.0	C	4
22	Singapore	-	-	D	86



	<b>Country</b>	<b>Total No. of Allied personnel</b>	<b>Current allied personnel: Population ratio</b>	<b>Category</b>	<b>Number of allied personnel required to maintain the target ratio of 1: 50,000</b>
23	Solomon Islands	24	19416.7	A	10
24	Taiwan	-	-	D	-
25	Tonga	3	34000.0	A	3
26	Tuvalu	1	10000.0	A	1
27	Vanuatu	11	18818.2	A	5
28	Vietnam	17081	4866.4	A	1663
	Regional aggregate	21431	81157.4	B	34786

Table 41: Summary of all regions

	Africa	Americas	EMR	Europe	SEA	WPR
<b>Ophthalmologists</b>						
<b>Total number</b>	<b>2210</b>	<b>45,700</b>	<b>12,298</b>	<b>42,647</b>	<b>13,348</b>	<b>42,158</b>
<b>Population ratio</b>	<b>1:326677</b>	<b>1:19,160</b>	<b>1:42834</b>	<b>1:20,663</b>	<b>1:122339</b>	<b>1:41256</b>
<b>Category</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>A</b>
<b>Data not available for</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>8</b>
<b>Optometrists</b>						
<b>Total number</b>	<b>1690</b>	<b>-----</b>	<b>7369</b>	<b>-----</b>	<b>----</b>	<b>4039</b>
<b>Population ratio</b>	<b>1:427192</b>	<b>-----</b>	<b>1:71485</b>	<b>-----</b>	<b>----</b>	<b>1:430623</b>
<b>Category</b>	<b>B</b>	<b>-----</b>	<b>A</b>	<b>-----</b>	<b>----</b>	<b>C</b>
<b>Data not available for</b>	<b>25</b>	<b>-----</b>	<b>9</b>	<b>-----</b>	<b>----</b>	<b>23</b>
<b>Ophthalmic allied personnel</b>						
<b>Total number</b>	<b>7253</b>	<b>-----</b>	<b>1330</b>	<b>-----</b>	<b>20,906</b>	<b>21,431</b>
<b>Population ratio</b>	<b>1:99539</b>	<b>-----</b>	<b>1:396068</b>	<b>-----</b>	<b>1:78111</b>	<b>1:81157</b>
<b>Category</b>	<b>A</b>	<b>----</b>	<b>C</b>	<b>----</b>	<b>B</b>	<b>B</b>
<b>Data not available for</b>	<b>6</b>	<b>----</b>	<b>16</b>	<b>----</b>	<b>2</b>	<b>16</b>

An important fact highlighted from the given data is that most of the countries that were expected to have greater need could not provide their data. In fact this reflects the inadequacy of organized eye care services. Contrary to this Europe and Americas also could not provide updated data.

## *4.2. Training Institutes for Eye-care personnel*

---

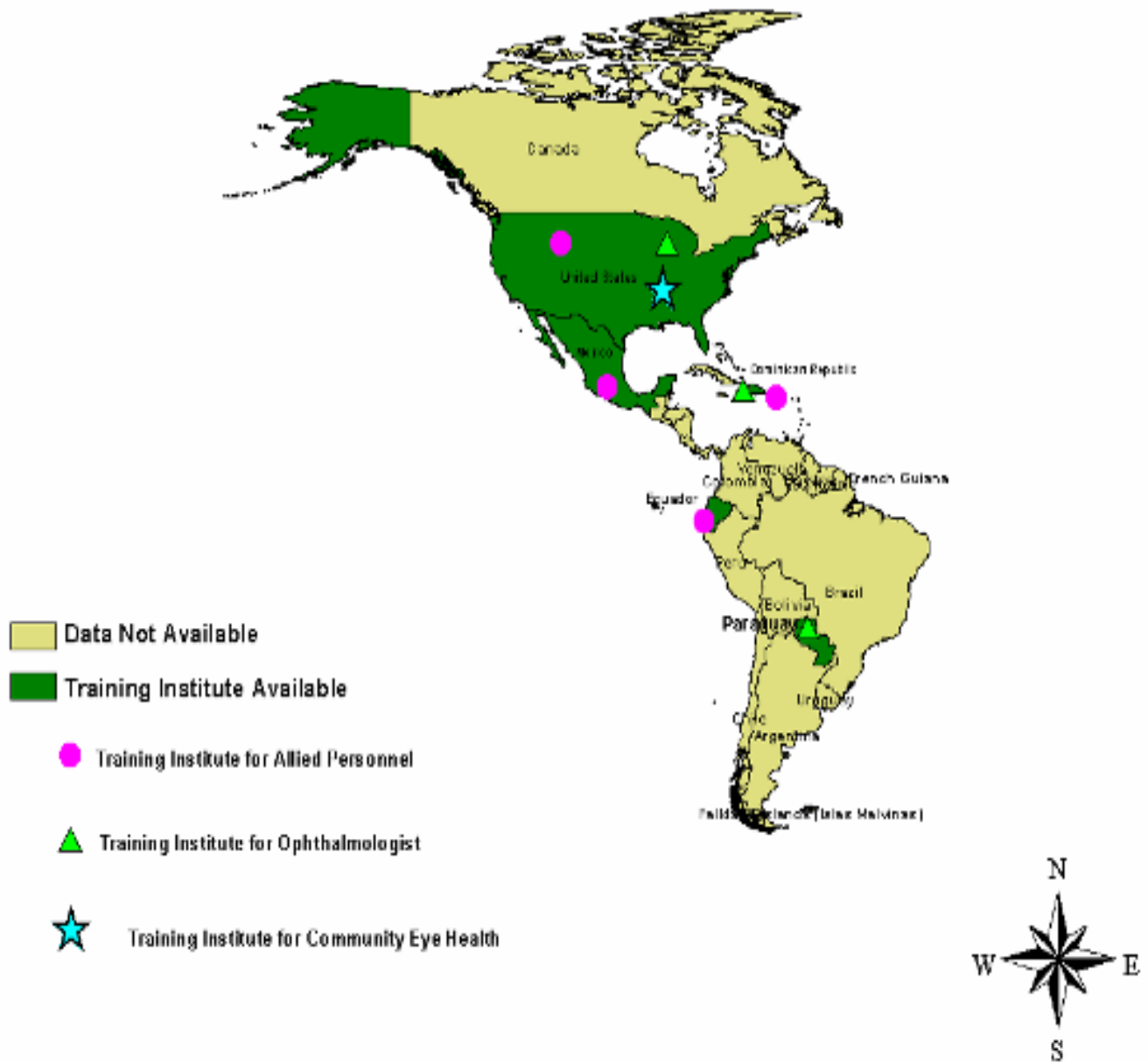
Very little information regarding training institutes was available, however we were able to benefit from a sufficiently detailed Vision 2020 directory of training institutes for eye care personnel ( given in annex 4). Whatever additional information was collected during this study has been given as annex 5 under training institutes for ophthalmologists, community eye health personnel ( doctors and nurse) and allied personnel ( all other cadres).

The training institutes are geographically mapped under various regions in map 14 to 19.



## Map 15: Training Institutes in Americas

### Americas "Training Institutes"



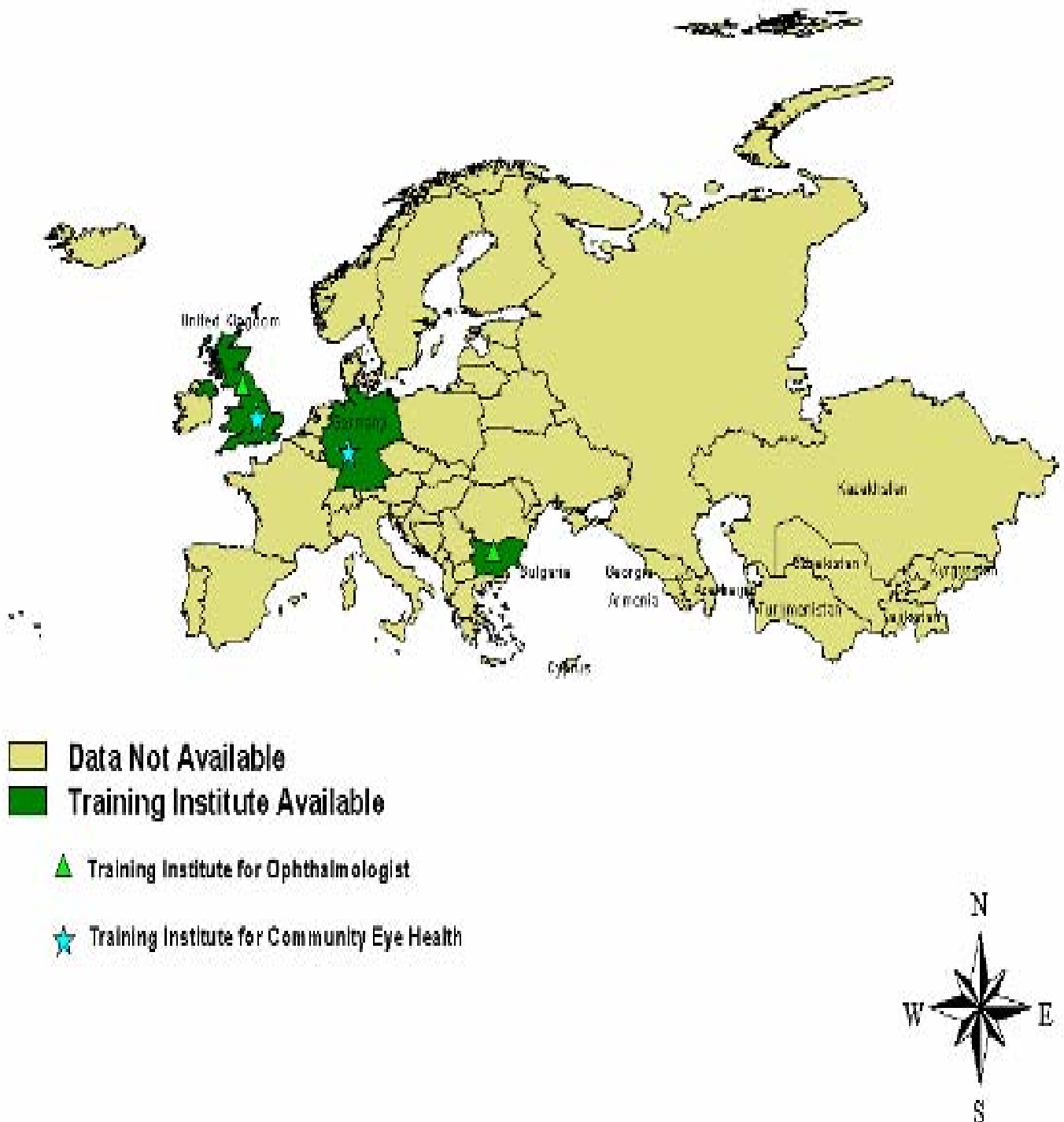
**Map 16: Training Institutes in EMR**

**Eastern Mediterranean Region "Training Institutes"**



## Map 17: Training Institutes in Europe

### Europe "Training Institutes"



## Map 18: Training Institutes in SEA

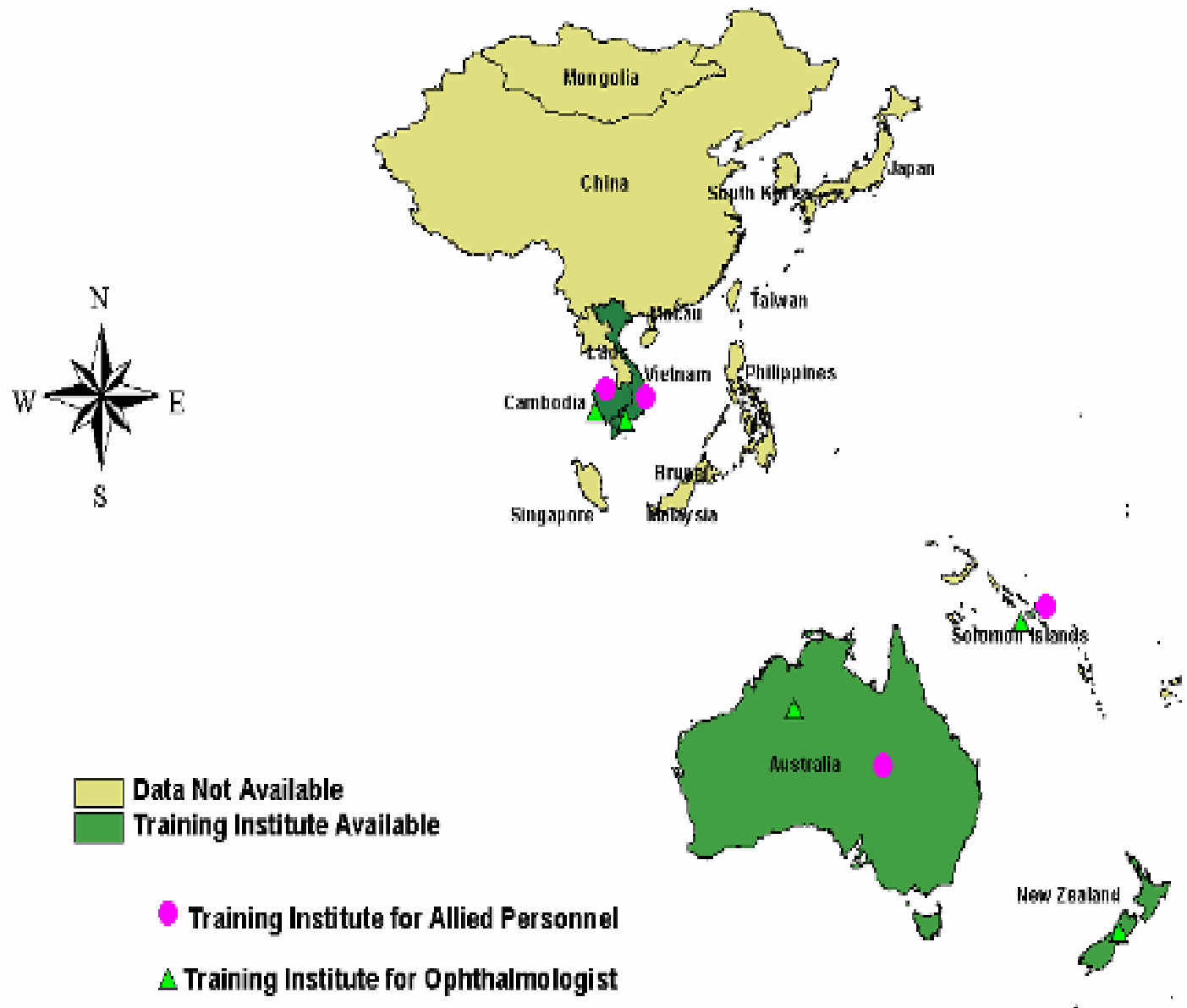
### South East Asia "Training Institutes"





## Map 19: Training Institutes in WPR

### Western Pacific Region "Training Institutes"



## *5. Limitations of the study*

---

The crucial importance of human resource in any health care provision system can not be denied, a fact known by almost every body but appreciated by only a few. We have been advocating the role of eye care teams in the vision 2020 framework for almost 8 years, but we still have a lot of mileage to cover. During the situation analysis we have found it extremely difficult to collect valid and updated information from even the developed countries. In fact in the developed countries there was the additional problem of a lot of web- based conflicting information. However we hope to have sensitized at least the participants of the study in maintaining updated information on HR in their own regions or countries. All public health planning aspects concerning HR need to be based on such updates scientific information and not mere estimation and conjecture. As regards the present study we recognize the limited information that we could present with in the planned time framework, but as we are still receiving data and we hope to regularly upgrade the information on HR in eye care and present it as regular update for circulation among all stake holders of eye care globally and regionally.

## *6. Recommendations*

---

- (1) A workshop may be carried out to establish Global definitions for different cadres of HR working in eye care. These definitions may be linked to levels of skills and/or qualifications achieved by the personnel.
- (2) Every country must then endeavor as a part of the National programme to collect disaggregated data on available cadres of human resource, preferably upto the level of a district.
- (3) A gap analysis at country level needs to be undertaken to know the exact country requirements and the areas of need in a country.
- (4) Based on the above findings a country-based strategic plan for human resource development needs to be undertaken as a part of the National programme for comprehensive eye care and in countries where the plan is already there HRD component needs to be addressed with a focus on situation analysis.
- (5) The data from the countries needs then to be collated at the regional level and then at the global level.
- (6) Data on Institutions involved in training and certifying different cadres of eye care workers need to be collected on country level and then collated at regional and global levels.
- (7) To undertake this very important task it is recommended that National Human Resource Development Task Forces may be developed with specific terms of reference to include, situation analysis, formulation of a strategic plan, implementation, monitoring and evaluation.
- (8) Regional information resource centers networked with similar country-based units/ centers need to be developed for HMIS in eye care. The issue may be dealt with in the framework of vision 2020 programmes as vision 2020 regional and local resource centers for information capable of regular updating and circulation of information.

## Annex 1: Templates

# Human Resource Development Assessment for Comprehensive Eye Care in SEA For Doctors

A. What is the total number of each one of the following cadres in your region?

Please place the cursor on the red spot for explanation of each cadre

	Ophthalmologists with subspecialty training	Ophthalmologists with fellowship	Ophthalmologists with diploma	Medical officers practicing eye surgery	Medical officers providing non-surgical eye care	Community Ophthalmologists	Others
Total number in SER	Total number	Currently operating	Total number	Currently operating	Total number	Currently operating	
<b>Total number in each country</b>							
Bangladesh							
Bhutan							
DPR Korea							
India							
Indonesia							
Maldives							
Myanmar							
Nepal							
Sri Lanka							
Thailand							
Timor-Leste							







## *Annex 2: Key to the templates*

---

<b>DOCTORS</b>	<b>EXPLANATION</b>
Ophthalmologists who are sub-specialists	Ophthalmologists with a minimum of 6 months sub-specialty training after fellowship/residency in ophthalmology accredited by recognized body/institution/council/college.
Ophthalmologists with fellowship	Ophthalmologists with a minimum of 3-year post graduate training in ophthalmology accredited by a recognized body/council/college.
Ophthalmologists with diploma	Ophthalmologists with a minimum of 1-year postgraduate training in ophthalmology recognized by an accredited college/council/body.
Medical officers practicing eye surgery	Doctors with M.B.B.S/M.D who do not have a post graduate qualification (fellowship/residency or diploma) but are practicing surgery in the form of cataract, lid surgery etc.
Medical officers providing non-surgical eye care	Doctors with MBBS/MD who do not have a postgraduate qualification (fellowship/residency or diploma) in ophthalmology but are providing non-surgical eye care.
Community Ophthalmologists	Doctors with a minimum of 1-year postgraduate training in community ophthalmology accredited by a recognized institute/council/body.



CADRE	EXPLANATION:
<b>Ophthalmic assistant/technician</b>	Allied person with a minimum of 1 year training in eye care after ten years of schooling.
<b>Ophthalmic nurses</b>	Qualified nurses with a minimum of 1 year training in eye care.
<b>Refractionists</b>	Allied personnel with a minimum of 1 year training in refraction in addition to ophthalmic assistant or ophthalmic technician course.
<b>Biomedical technicians</b>	Personnel trained in maintenance of equipments.
<b>Optometrists</b>	Personnel with Bachelors in optometry (minimum of 3 years of training).
<b>Orthoptists</b>	Allied personnel with BSc or diploma in orthoptics.
<b>Ophthalmic technologist</b>	Qualified optometrists with a minimum of 1 year training in ophthalmic technology.
<b>Qualified opticians</b>	Allied personnel with a minimum of 1 year training in dispensing Optics.
<b>Nonqualified practicing opticians</b>	Allied personnel practicing dispensing of spectacles without any accredited qualifications in dispensing optics.
<b>Low vision specialists</b>	Ophthalmic allied personnel providing low vision assessments and devices.
<b>Orientation and mobility trainers</b>	Ophthalmic allied personnel or non-eye care allied personnel providing orientation and mobility training.
<b>Cataract surgeons</b>	Eye care workers who are not doctors but practicing cataract surgery
<b>Primary eye care workers</b>	Existing primary health care workers trained in eye care
<b>Eye care managers</b>	Non – medical personnel providing eye care management
<b>Others</b>	Allied personnel who do not fall in any of the above mentioned categories. Please specify their cadres, type and duration of training.

## *Annex 3: List of resource personnel*

---

### **1.AFRICA**

Dr. Danial Etayale  
Vision2020 Coordinator  
WHO prevention of blindness and deafness  
Office 6014  
CH\_1211  
Geneva 27 Switzerland.

Dr. Boly Olowu  
National Coordinator, Nigeria.

Dr. Lamine Traoré  
Responsable du department de Recherche IOTA, BP 248 .  
IOTA,Mali..

Mr. Tsegaye Bedane Fulassa  
Expert coordinator  
Federal ministry of health prevention of blindness  
Nigeria.

Dr. Gracee.B.Saguti  
National eye care,Onchocerciasis Program Coordinator  
Ministry of health  
Tanzania.

Dr. Yolanda Zambujo  
Coordinator National Prevention Of Blindness  
Mozambique.

## **2.AMERICAS**

Dr. Rainald Duerksen  
Chair IAPB

Dr. Van Lansingh  
CBM Co worker  
V2020 LAS Regional Coordinator.

Dr. Martin Ruppenthal  
CBM ,LARO

## **3.EMR**

Dr. Abdul Hannan Choudhury  
Medical Officer,  
Control and Prevention of Blindness,  
WHO, EMRO , Post Box 7608 Nasr City ,  
Cairo11371, Egypt

Dr. Abdullah Al Kuhlany  
National Coordinator  
Prevention Of Blindness Program  
Yemen.

Dr. Noureddine Chaouki  
Director of epidemiology and disease control/focal point  
Ministry of health  
Morocco

Mr. Mohammad Daher Hassan  
Optometrist  
General Peltier Hospital  
Djibouti.

Prof. Asad Aslam Khan  
National Coordinator, NCPB  
Pakistan

Prof. Mohammad Naseem Panezai  
Provincial Coordinator  
CEC cell  
Balochistan  
Pakistan.

Prof. Zia Uddin Sheikh  
Provincial Coordinator  
CEC Cell  
Karachi  
Sindh  
Pakistan.

Prof .Shad Mohammad  
Provincial Coordinator  
CEC Cell  
Peshawar,  
NWFP  
Pakistan.

#### **4.WPR**

Dr. Do Seiha  
National PBL and VISION 2020 Coordinator,  
Cambodia.

Dr. Richard Le Mesurier  
IAPB Vision2020 Coordinator  
Western Pacific Region  
Centre For Eye Research Australia  
University Of Melbourne  
Locked Bag8,32 Gisborne Street  
East Melbourne Victoria8002  
Australia.

Mr .Mike Davies.  
Coordinator, CBR Advisory Working Group.

Dr. Ailian Hu  
Secretary Prevention Of Blindness  
National Guiding Committee Of Blindness Prevention(NGCBP)  
Beijing  
China.

Dr. Quingjunlu  
Tongren Hospital  
WHO Calloborating Center For Prevention Of Blindness  
Beijing  
China.

Dr. K. Konayama MD  
Department Of Ophthalmology  
Juntendo University School Of Medicine,NO 570\_78  
MizunoSayama,Saitama,  
Japan.

## **5.SEA**

Mr. P Kirubanithi  
Sr Librarian and Info Officer\_ LAICO  
Aravind Eye Care System  
1,Anna Nagar,Madurai 62 020  
Tamil Nadu  
India.

Dr. Farida Sirlan  
Director Cicendo Eye Hospital  
Bandung  
Indonesia.

Dr. Jose  
Deputy Director General  
Directorate General Health Services

New Delhi  
India

Dr. Rabi Ul Hassan  
Regional Chairman IAPB Searo  
Chittagong  
Bangladesh.

## **6.EUROPE:**

Dr. Ivo Kocur  
Vision2020,Global Coordinator  
WHO,Prevention of Blindness And Deafness  
Geneva Switzerland.

Prof Dr. Yury May Chuk  
Helmholtz Institute Of Ophthalmology  
Moscow  
Russian federation.

Dr. Naira Khachtryan,MD,MPH,DRPH candidate  
Meghrigian Eye Institute Of Preventive Ophthalmology  
Lecture Of Preventive Ophthalmology  
College Of Health Sciences  
American University Of Armenia.

## *Annex 4: Vision 2020 directory of courses*



# **VISION 2020: The Right to Sight**

## **Directory of Training Programmes 2006**

(Not including regular degree programmes and residency training programmes)

Published by

### **International Agency for the Prevention of Blindness A SPECIAL SUPPLEMENT FOR TRAINING PROGRAMMES**

Every year a detailed list of VISION 2020-related training programmes is published in the January issue of IAPB News. This includes on-going programmes open to all cadres of eye care professionals from around the world. Starting this year, the schedule of training programmes will be published as a separate supplement and circulated along with January issue. In subsequent years, only updates and changes in existing programmes will be carried in the January issue. A new supplement will be published once in three years unless major changes necessitate earlier publication. This list will not include regular degree and residency programmes. Only those courses open to participants from other countries will be listed.

Updates and details of new programmes must be submitted in the following format.

**Information on Long / Short Term on-going Training Programmes**

Name of the Programme :

Venue :

Number of Positions :

Duration of Programme :

Contact Information :

(Persons to contact, address & contact numbers, email/website)

This information should reach the following address before 15 December for inclusion in the January issue.

International Agency for the Prevention of Blindness  
IAPB Central Office

*L.V. Prasad Eye Institute,  
L.V. Prasad Marg, Banjara Hills*

Hyderabad 500 034, INDIA Fax: +91-40-  
2354 8271 Email: [agency@lvpei.org](mailto:agency@lvpei.org)



# Ophthalmology <sup>AFRICA</sup>

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Kinshasa, Democratic Republic of Congo</b> Ophthalmic Training Centre for Central Africa (CFOAC)	Cataract Surgeons Course	12 Months	5	Dr. Adrian Hopkins or Dr. Makwanga Mankiew CFOAC, Bureau de Coordination de la CBM B.P. 406, Kinshasa 1 Republique Democratique Du Congo Tel / Fax: +243-8803940 / Email: KINCBM@ic.cd (Note: Training offered to French speaking candidates from Central Africa)
<b>Accra, Ghana</b> Western African College	Diploma in Ophthalmology  Fellowship in Ophthalmology	2 years  4 - 5 years		Ms. Maria Hagan email: hagan_maria@yahoo.co.uk
<b>Lilongwe, Malawi</b> SADC Ophthalmic Training Programme, Malawi College of Health Sciences	Cataract Surgery Training Prog.  Diploma in Ophthalmology  Ophthalmic Clinical Officer	12 Months  12 Months  12 Months	3  -  15	Professor Mosses C. Chirambo MD, Course Director  SADC Ophthalmic Training Centre  Malawi College of Health Sciences, Lilongwe. Email: mchirambo@malawi.net
<b>Pietermaritzburg, South Africa</b> Edendale Hospital	Diploma in Clinical Ophthalmology	6 Months	2	Dr. Colin Cook Kwazulu-Natal Blindness Prevention Programme, P.O. Box 899, Hilton, 3245 South Africa Email: myrna@mweb.co.za
<b>Moshi, Tanzania</b> KCMC, Tumbaini University <b>Dar Es Salaam, Tanzania</b>  Muhimbili University College of Health Sciences	Assistant Medical Officer in Ophthalmology and Cataract Surgery  Master of Medicine Ophthalmology	2 years  3 years	4  3	Dr. A.Hall, Principal Assistant Medical Officer in Ophthalmology School, P.O.Box 545, Moshi, Tanzania Tel/Fax: +255 27 2754890 Email: eyedept@kcmc.ac.tz  Dr. Dinah Masesa Muhimbili University College of Health Sciences Dar Es Salaam, Tanzania Email: masesad@yahoo.com

# Ophthalmology <sup>AFRICA</sup>

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Nairobi, Kenya</b> KMTC	Higher diploma in ophthalmology & cataract surgery	18 months	10	The Director, KMTC, PO Box 31095, Nairobi, 00100, Kenya Email: inquiries@kmtc.ac.ke or admissions@kmtc.ac.ke
	Higher diploma in cataract surgery	12 months	6	
<b>Addis Ababa, Ethiopia</b> Addis Ababa University	Diploma in Ophthalmology	2 years		Head, Department of Ophthalmology Addis Ababa University, Medical Faculty, P.O.Box 9086, Ethiopia Email: aauoph@ethionet.et

## LATIN AMERICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Santo Domingo, Dominican Republic</b> Hospital Dr. Elias Santana	Fellowship Programmes Glaucoma Pediatric Ophthalmology Retina	1 year 1 year 1 year	3	Dr. Juan Batlle, Professor and Chairman Fantino Falco No. 5, Santo Domingo Dominican Republic Tel: +1-809-563-1324 / Fax: +1-809-544-1885 Email: jbatlle@codetel.net.do  Ms. Nicole Hunter, Administrator Tel: +1-809-545-3348 / Fax: +1-809-545-3329 Email: nicole.hunter@mmint.org Ms. Evelyns Diaz, Academic Coordinator Email: e.diaz@mmint.org
	Oculoplastics Cornea	1 year 1 year		
<b>Asuncion, Paraguay</b> Fundacion-Vision	Programa Vision	3 years		

## Ophthalmology NORTH AMERICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Baltimore, USA</b> Dana Center for Preventive Ophthalmology	Preventive Ophthalmology Fellowship	1 year or more	1 or more	Harry Quigley Johns Hopkins University Schools of Medicine and Public Health, Baltimore MD, USA e-mail: hquigley@jhmi.edu
	Public Health Ophthalmology Fellowship	1 year	upto 10	

## EASTERN MEDITERRANEAN

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Peshawar, Pakistan</b> Pakistan Institute of Community Ophthalmology	Microsurgical Training Course	2 weeks	24 / year	Dr. Mohammad Babar Qureshi Director Academics Pakistan Institute of Community Ophthalmology Hayatabad Medical Complex P.O Box 125, GPO, Peshawar, Pakistan Tel: +92-91-9217376 - 80 / 9217425 Fax: +92-91-9217413 Email: pico@pes.comsats.net.pk
<b>Peshawar, Pakistan</b> Khyber Institute of Ophthalmic Medical Sciences	Diploma in Clinical Ophthalmology	2 years	9	Dr. Tariq Babar Clinical Courses Coordinator  Khyber Institute of Ophthalmic Medical Sciences Hayatabad Medical Complex, Peshawar, Pakistan Tel: +92-91-9217376 - 80 / 819149 Fax: +92-91-9217413 Email: pico@pes.comsats.net.pk
	Fellowship in Clinical Ophthalmology	4 years	upto 10	
<b>Rawalpindi, Pakistan</b> Al-Shifa Trust Eye Hospital Community Ophthalmology	Fellowship in Ophthalmology	4 years 2 years 1 year	10 5 2	Prof. Jahangir Akhtar Dean, Pakistan Institute of Ophthalmology, Al-Shifa Trust Eye Hospital, Jhelum Road, Rawalpindi, Pakistan Tel: 092 51 5487820-24, Fax: 092 51 5487827
	Diploma in Ophthalmology Subspeciality Fellowships in Paediatric Ophthalmology Subspecialty Fellowships in Medical and Surgical Retina			

## Ophthalmology EUROPE

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Sofia, Bulgaria</b> St. Anna University Hospital	Uveitis / Intraocular Inflammation Herpetic Eye Disease Pseudoexfoliation Syndrome	5 days 5 days 5 days	15 15 15	St. Anna University Hospital, Eye Clinic, 1 Dimitar Mollov Street, 1709 Sofia, Bulgaria. Tel: +35929756023  Email: centersight@bitex.com
	Lasers in Ophthalmologic Practice	5 days	15	
	Keratoplasty	5 days	15	
	Ocular plastic surgery	5 days	15	

## SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Chittagong, Bangladesh</b> Chittagong Eye Infirmary and Training Complex	Microsurgical & IOL Training	3 months	2	Dr. Muniruzaman Osmani  Chittagong Eye Infirmary and Training Complex Pahartali, P.O. Box: 729, Chittagong-4000, Bangladesh Tel: 659017-19 Fax: 880-31-659020 E-mail: icocetc@spnetctg.com Wed Site: www.eyefirmary.org
	Glaucoma Cornea Vitreo Retina	6 months	2 2	
		3 months		
	Paediatric Ophthalmology Fellowship	6 months (Medical)	2	
1 year (Surgical)		2		
<b>Guwahati, India</b> Sri Sankaradeva Nethralaya	Fellowship in General Ophthalmology Fellowship in Vitreo-Retina Surgery Observership in Ophthalmology	1 year 2 years 3 weeks	6 2 20	Dr. Harsha Bhattacharjee Medical Director and Trustee-Sri Sankaradeva Nethralaya, Beltola, Guwahati-781 028 Assam, India Tel: +91-361-2228879/80, 2228921/22, 2305516 Fax: +91-361-2228878 Email: ssnghy1@sify.com

## Ophthalmology SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Hyderabad, India</b> L.V.Prasad Eye Institute	<b>Long Term Fellowships</b>			Education Centre L.V.Prasad Eye Institute L.V. Prasad Marg, Banjara Hills Hyderabad 500 034, India Tel: +91-40-306 12 634/ Fax: +91-40-2354 8271 Email: education@lvpei.org Website: www.lvpei.org
	Cornea	15 months	1	
	Glaucoma	15 months	1	
	Retina	15 months	1	
	Paediatric	15 months	4	
	Ophthalmic Plastic Surgery	15 months	1	
	Comprehensive ophthalmology	15 months	1	
	<b>Short term Fellowships</b>			
	Cornea	3 months	3	
	Glaucoma	3 months	3	
	Retina	3 months	3	
	Pediatric	3 months	3	
	Microsurgery (SICS)	3 months	3	
	Phacoemulsification	3 months	3	
Retina Laser	3 months	3		
Ophthalmic Plastic Surgery	2 months	2		
Ophthalmic Diagnostic Techniques - Basic - Advanced	1 month	1		
<b>Observerships</b>				
Subspecialty	3 months	1		
Observership Rotatory	15 days	1		
Observership (for P.Gs and Residents)	1 week	1		
		1 month		

## Ophthalmology SOUTH EAST ASIA

Location & Institution	Name of the Programme	No. of Positions	Contact
<b>Madurai, India</b> Aravind Eye Hospital (AEH)/ Lions Aravind Institute of Community Ophthalmology (LAICO)	<b>Duration Long-term</b> <b>Ophthalmology Fellowships</b> Retina-Vitreous 2 years Cornea 18 months Paediatric Ophthalmology and Strabismus 18 months Glaucoma 2 years Anterior segment / Intraocular Lens Microsurgery 2 years Uvea 18 months Orbit and Oculoplasty 18 months <b>Short-term</b> <b>Ophthalmology Fellowships</b> Paediatric Ophthalmology 6 months (only for International) (Jan & Jul) <b>Short Term Clinical Courses</b> IOL Microsurgery Course 1 month Small Incision Cataract Surgery 1 month Phacoemulsification 1 month Diagnosis and Management 8 weeks of Glaucoma Lasers in Diabetic Retinopathy 2 months Management	8 4 5 5 10 1 2 1 6 6 6 4 4	<b>Dr. Venkatesh Prajna</b> Chief-Department of Medical Education LAICO, 72, Kuruvikaran Salai, Gandhi Nagar Madurai- 625 020, Tamil Nadu, India Tel: +91-452-5356100, Extn: 120 Fax: +91-452-2530984 Email: prajna@aravind.org <b>Dr. P. Vijayalakshmi</b> Chief – Paediatric Ophthalmology Aravind Eye Hospital 1, Annanagar, Madurai - 625020, Tamilnadu, India Tel: 91 452 5356100; Fax: 91 452 2530984 Email: childreneye@aravind.org <b>The IOL- Course Coordinator</b> LAICO, 72, Kuruvikaran Salai, Gandhi Nagar Madurai- 625 020, Tamil Nadu, India Tel: +91-452-5356100, Extn: 120 Fax: +91-452-2530984 Email: training@aravind.org <b>Glaucoma-Coordinator</b> Aravind Eye Hospital, Swamy Nelliappar High Road Tirunelveli, Tamilnadu, India Tel: +91-462-233-7103/04 Fax: +91-462-233-1633 Email: glaucoma@tvl.aravind.org <b>Course-Coordinator</b> Aravind Eye Hospital – Retina Clinic 1, Annanagar, Madurai – 625 020 Tel: +91-452-5356100, Extn: 115 Fax: +91-452-2530984 Email: uma@aravind.org

## Ophthalmology SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>New Delhi, India</b> Venu Eye Institute and Research Centre <b>Tiruchirapalli, India</b> Joseph Eye Hospital <b>Vellore, India</b> Schell Eye Hospital	Fellowship - General Ophthalmology Vitreo-Retina Fellowship IOL Microsurgical Training Indirect Ophthalmoscopy with Slit Lamp Funduscopy Contact Lens Training SICS Fellowship in Anterior Segment Fellowship in Posterior Segment Microsurgery Training ECCE & IOL Small Incision Cataract Surgery Phacoemulsification IOL Fellowship	1 year 1 year 2 months 1 month 15 days 1 month 1 year 1 year 8 weeks 8 weeks 2 years	2 1 2 1 1 1 4 4 8 4 4	<b>Dr. Jeena Mascarenhas</b> Consultant – CME Department Venu Eye Institute and Research Centre 1/31, Sheikh Sarai Institutional Area Phase – 2, New Delhi – 110 017 Tel: +91-11-2925 1951 / 2925 0757 / 2925 2417 Fax: +91-11-2925 2370 Email: vcs@spectranet.com (* Open to International Trainees) <b>Dr. Nelson Jesudasan</b> Director, Joseph Eye Hospital Institute of Ophthalmology, P.B.No. 138 Tiruchirapalli 621 001, India Tel: +91-431-2460622 / 2462862 Fax: +91-431-2415922 Email: jehetry@eth.net <b>Dr. Renu Raja</b> Department of Ophthalmology, Schell Eye Hospital Christian Medical College & Hospital Arni Road, Vellore 632 001, Tamilnadu. Tel: +91-416-223-2021 / 222 - 2115 Fax: +91-416-223-2035

## Low Vision / Rehabilitation <sup>AFRICA</sup>

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Nairobi, Kenya</b> Kenya Medical Training Centre <b>Ruharo, Uganda</b> Institute of Special Education Ruharo Eye Unit	Higher diploma in vision therapy Diploma in vision support Introduction to Low Vision for eye workers	1 year 1 year 6 weeks	4 12 5	<b>The Director</b> KMTC Box 30195, Nairobi 00100, Kenya Email: inquiries@kmtc.ac.ke or admissions@kmtc.ac.ke <b>Dr Kenneth Kagame</b> Medical Director Ruharo Eye Unit, Uganda Tel: 0485 20502 Email: ruharo@utonline.co.ug

## NORTH AMERICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Mexico City, Mexico</b> Lighthouse International <b>New York, USA</b> Lighthouse International	Manejo Compresible del Paciente con Baja Vision  Pediatric Low Vision Care	May 5 – 6  Nov 10-11		Cathy Czeto Lighthouse International 111 East 59 <sup>th</sup> Street New York, NY 10022 www.lighthouse.org/ce cczeto@lighthouse.org
<b>Philadelphia, USA</b> Lighthouse International <b>San Francisco, USA</b>	Diabetes-related Eye Disease and Low Vision Comprehensive Clinical Low Vision Care/Low Vision Therapy  Working with Older Adults Who Are Visually Impaired: A Hands-on Approach	May 20 June 14-16, Sept 27-29  Sept 21		
Lighthouse International	Working with Older Adults Who Are Visually Impaired: A Hands-on Approach	Feb 16		

## Low Vision / Rehabilitation SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Coimbatore, India</b> Sri Ramakrishna Mission Vidyalaya	Community Based Rehabilitation	1 year		Dr. M.N.G. Mani, Hon. Director ICEVI, IHRDC Campus Ramakrishna Mission Vidyalaya Coimbatore - 641 020,  Tamilnadu, India Tel: +91-422-269-7529 / 30 Fax: +91-422-269-2353 Email: ihrdc@vsnl.net, sgicevi@vsnl.net
<b>Madurai, India</b> Aravind Eye Hospital	Training in Low Vision	1 month (every month)	1	Dr. Ilango Aravind Eye Hospital Low vision Department 1, Annanagar, Madurai – 625 020 Ph: 91 452 5356100 Extn: 115 Fax: 91-452-2530984 Email: ilango@aravind.org
<b>New Delhi, India</b> Venu Eye Institute and Research	Low Vision Assessment Training	10 days	2	Dr. Jeena Mascarenhas Consultant – CME Department



Centre	Course			Venu Eye Institute and Research Centre 1/31, Sheikh Sarai Institutional Area Phase – 2, New Delhi – 110 017 Tel: +91-11-2925 1951 / 2925 0757 / 2925 2417 Fax: +91-11-2925 2370 Email: vcs@spectranet.com
<b>Hyderabad, India</b> L.V.Prasad Eye Institute	Orientation Workshop Module on Low Vision Awareness Low Vision Care Fellowship	3 days  3 months	15  2	Dr. Sarfaraz Ali Khan Director, Vision Rehabilitation Centres  L.V.Prasad Eye Institute L.V. Prasad Marg, Banjara Hills Hyderabad 500 034, India Tel: +91-40-2354 8267 / Fax: +91-40- 2354 8271 Email: sarfarazkhan@lvpei.org

## Community Eye Health AFRICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Banjul, The Gambia</b> Regional Ophthalmic Training Programme, Royal Victoria Teaching Hospital	Certificate in State Enrolled Nurse/Community Health Ophthalmic Nursing	9 months	6	Courses Administrator Regional Ophthalmic Training Programme Royal Victoria Teaching Hospital Banjul, The Gambia OR  Courses Administrator c/o Sight Savers International P.O.Box 950, Banjul, The Gambia Email: rotp@qanet.gm
<b>Kaduna, Nigeria</b> Post-Basic Nursing School	Advanced Diploma in Community Ophthalmic Nursing	12 months		Ms. Grace Ekuma, School of Post Basic Ophthalmic Nursing National Eye Centre, PMB 2267, Kaduna, Nigeria

## EASTERN MEDITERRANEAN

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Peshawar, Pakistan</b> Pakistan Institute of Community Ophthalmology	M.Sc in Community Ophthalmology	1 year	15	Dr. Mohammad Babar Qureshi Director Academics Pakistan Institute of Community Ophthalmology Hayatabad Medical Complex P.O Box 125, GPO, Peshawar, Pakistan Tel: +92-91-9217376 - 80/ 9217425 Fax: +92-91- 9217413 Email: pico@pes.comsats.net.pk

## EUROPE

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Munich, Germany</b> University Eye Hospital	Tropical Ophthalmology	-	30	<b>Prof. Dr. Med Volker Klauss</b> University Eye Hospital, Munich. e-mail: Volker.klauss@med.uni-muenchen.de

## Community Eye Health EUROPE

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>London, UK</b> London School of Hygiene and tropical Medicine (LSHTM)	MSc Community Eye Health Diploma Course in Community Eye Health Short Course in Tropical Ophthalmology VISION 2020 short course	1 year/2 years part-time. 14 weeks 3 days 5 days	16 5-10 30 30	Ms. Adrienne Burrough, LSHTM, Keppel Street, WC1E 7HT Tel: 44 20 7958 8316 e-mail: adrienne.burrough@lshtm.ac.uk website: www.iceh.org.uk (or) www.lshtm.ac.uk/courses

## SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Chittagong, Bangladesh</b> Chittagong Eye Infirmary & Training Complex	Diploma in Community Ophthalmology	1 year	6/year	Dr. Md. Fazlul Huq Director - Institute of Community Ophthalmology P.O. Box 729, Pahartali  Chittagong-4000, Bangladesh Tel.: +880-31-659017 / 19 Fax: +880-31-659020 Email: icocetc@spnetctg.com
<b>Hyderabad, India</b> ICARE  L.V.Prasad Eye Institute	Short course in Tropical Ophthalmology  Diplomain Community Eye Health (Full Time) Diploma in Community Eye Health (Modular) Community Eye-care Coordinator Training Programme	3 days  6 months 1-3 weeks 6 months	30  12/year 3/Module 4/year	Dr. B.R.Shamanna & Mr. M. Srinivas Course Convenors, ICARE, L.V. Prasad Eye Institute, L.V. Prasad Marg, Banjara Hills, Hyderabad - 34 Andhra Pradesh, India  The Course Convenor, ICARE L.V.Prasad Eye Institute Post Bag # 1, Kismatpur B.O Rajendernagar P.O, Hyderabad - 500 030 Tel: +91-40-2401 1243 Fax: +91-40-2401 1293 Email: training@icare.stph.net

## Community Eye Health SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Madurai, India</b> Aravind Eye Hospital/ Lions Aravind Institute of Community Ophthalmology	Certificate Course in Community Outreach and Social Marketing of Eye Care Services	4 weeks	10-15	Mr. Keerti Pradhan LAICO-AEH, 72, Kuruvikaran Salai Gandhi Nagar, Madurai- 625 020, Tamil Nadu Tel: +91-452-535-6100 Fax: +91-452-2530984 Email: courses@aravind.org
	Certificate Course on Outreach Paediatric Eye Care Services (After completing one month course in general Community Outreach and Social Marketing of Eye Care Services)	8 weeks	2-3	Ms. Sheela Devi (Address same as above) Email: childreneye@aravind.org
<b>Tiruchirapalli, India</b> Joseph Eye Hospital	Fellowship in Community Ophthalmology	1 year	4	Dr. Nelson Jesudasan Director, Joseph Eye Hospital Institute of Ophthalmology, P.B.No. 138 Tiruchirapalli 621 001, India Tel: +91-431-2460622 / 2462862 Fax: +91-431-2415922 Email: jehtry@eth.net

## Mid level Ophthalmic Personnel <sup>AFRICA</sup>

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Cameroon</b> University of Yaoundé I	Ophthalmic Nursing	2 - 5 years	4	Profossor Bengono Génèviève Professeur Ebana Mvogo Côme Faculty of Medicine University of Yaoundé I, Cameroon Tel: 00 237 999 16 81 Email: ebanamvogo@yahoo.fr
<b>Kinshasa, Democratic Republic of Congo</b> Ophthalmic Training Centre for Central Africa (CFOAC)	Techniciens Supérieur en Ophtalmologie (Ophthalmic medical assistants)	2 Years	20/year	Dr. Adrian Hopkins or Dr. Makwanga Mankiew CFOAC, Bureau de Coordination de la CBM B.P. 406, Kinshasa 1 Republique Democratique Du Congo Tel / Fax: +243-8803940 Email: KINCBM@ic.cd

## Mid level Ophthalmic Personnel AFRICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
Health For Peace Initiative, Training Programmes	Advanced Diploma in Surgical Ophthalmic Nursing Diploma in Ophthalmic Nursing	18 months 12 months		Dr. Edith Ackuaku C/o Sight Savers International P.O.Box 950 Banjul, The Gambia Email: emack@quanet.gm
<b>Accra, Ghana</b> Ophthalmic Nursing School	Optical Technicians Course Ophthalmic Nursing Course Equipment Technicians Maintenance Course	2 years 1 year 6 Weeks 6-12 Weeks	8-16	Ms. Ellen A. Clegg, Course Coordinator Ophthalmic Nursing School Korle Bu Teaching Hospital Accra P.O. Box 77, Korle Bu, Ghana  Head, Biomedical Engineering Unit (Attention: Mr. John Osei), Ministry of Health Korle-Bu, Accra, Ghana
Biomedical Engineering Unit, Ministry of Health	Equipment Technicians Maintenance Course			
<b>Kikuyu, Kenya</b> PCEA Kikuyu Eye Unit	Ophthalmic Assistants Course Ophthalmic Theatre Course Refraction Training Course Instrument Workshop Technician	12 weeks 10 weeks 12 weeks 8 weeks	10 5 / 6 2 6	Dr. Dharminder S. Walia PCEA Kikuyu Eye Unit P. O. Box 1021, Kikuyu, Kenya Tel: 066 32415 / 32852 Email: kikuyueyeunit@maf.or.ke
<b>Nairobi, Kenya</b> Kenya Medical Training Centre	Higher Diploma in Ophthalmic Nursing  Diploma in Clinical Technology	12 months  3 years	14	The Director KMTC, PO Box 31095, Nairobi, 00100, Kenya Email: inquiries@kmtc.ac.ke or admissions@kmtc.ac.ke
<b>Benin City, Nigeria</b> Post-Basic Ophthalmic Nursing School	Diploma in Ophthalmic Nursing	12 months	25	Mrs. Iyabo F. Ogbeide Assistant Director of Nursing Post Basic School of Ophthalmic Nursing University of Benin Teaching Hospital Benin City, Nigeria
<b>Enugu, Nigeria</b> Post-Basic Ophthalmic Nursing School	Diploma in Ophthalmic Nursing	12 months	15	Mrs. G. C. Madubuko Post Basic School of Ophthalmic Nursing University of Nigeria Teaching Hospital Enugu, Nigeria

## Mid level Ophthalmic Personnel AFRICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Kaduna, Nigeria</b> National Eye Centre School of Post Basic Nursing Ahmadu Bello University Teaching Hospital University of Jos Teaching Hospital University College Hospital Post-Basic Ophthalmic Nursing School Post-Basic Nursing School National Eye Centre	Ophthalmic Nursing Course Ophthalmic Nursing Course IOL Conversion Course IOL Conversion Course Diploma in Ophthalmic Nursing Diploma in Ophthalmic Nursing Equipment Technicians Maintenance Course	12 months 12 months   12 months 12 months 6-12 weeks	12-20	Sight Savers International P.O.Box 503, Kaduna, Nigeria OR 1 Golf Course Road, Kaduna, Nigeria Email: ssing@infoweb.abs.net /  sightsavers@wwlkad.com  Ms. Grace Ekuma School of Post Basic Ophthalmic Nursing National Eye Centre, Kaduna, Nigeria  The Principal, Post Basic School of Nursing  Ahmadu Bello University Teaching Hospital Head, Department of Biomedical Engineering National Eye Centre, Kaduna, Nigeria  Email: neckad@yahoo.com
<b>Lagos, Nigeria</b> Post-Basic Ophthalmic Nursing School	Diploma in Ophthalmic Nursing	12 months	15	Mrs. Kate C. Onuoha  Post Basic School of Ophthalmic Nursing Lagos University Teaching Hospital, Lagos, Nigeria
<b>Dakar, Senegal</b> Hospital Le Dantec	Technicien Supérieur de Ophthalmologie	2 years 2 years	10 in	Prof. Alassane Wade  Chef de Service, Clinique Ophthalmologique Hopital Le Dantec, Dakar, Senegal
<b>Cape Town, South Africa</b> Cape Technikon	Diploma - Dispensing Optician			Head of Department- Mr. Peter Clarke-Farr Department Opticianary, P.O. Box 652 Cape Town, South Africa 8000 Tel: +27-21-460 3169/Fax: +27-21-460-3723 Email: pclarke@ctech.ac.za Web Page: www.ctech.ac.za/crses/od.html

## Mid level Ophthalmic Personnel AFRICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Durban, South Africa</b> International Centre for Eyecare Education (ICEE) University of Durban Westville	Train The Trainer: Refraction Programme	8 weeks	10	Ms. Palesa Dube Tel: +27-31-2044088/ Fax: +27-31-2044666 Email: palesa@iceeafrica.co.za
<b>Pietermaritzburg, South Africa</b> Edendale Hospital	KwaZulu-Natal Eye Care Programme Ophthalmic Nurse Training	12 months	12	Dr. Colin Cook Kwazulu-Natal Blindness Prevention Programme, P.O. Box 899, Hilton, 3245 South Africa Email: myrna@mweb.co.za
<b>Moshi, Tanzania</b> KCMC, Tumaini University	Ophthalmic Nursing	2 years	14	Mr. Zephania Memba, Principal School of Advanced Ophthalmic Nursing P.O.Box 3010, KCMC, Moshi, Tanzania Tel: +255-27-2754377 Ext. 416 Fax: 2754381 Email: kcmcadmin@kcmc.ac.tz
<b>Mvumi, Tanzania</b> Mvumi Mission Hospital	Ophthalmic Medical Assistant  Ophthalmic Medical Assistant - Refresher	12 weeks  1 week	12  12	Head of Eye Unit Mvumi Mission Hospital, Tanzania Tel: 23 24361 ext 25 Email: mheyeddept@yahoo.com
<b>Lomé, Togo</b> Faculté de Médecine, Université de Lomé	Technicien Supérieur de Ophtalmologie	3 years	4 - 8	Prof. Patrice Balo Faculté de Médecine, Université de Lomé, Lomé, Togo Email : komibalo@yahoo.fr
<b>Mbarara, Uganda</b> Ruharo Eye Centre	Ophthalmic Assistant Course Theatre Assistant	3 months 10 weeks	10 - 12 8 - 10	Medical Director Ruharo Eye Centre Box 14, Mbarara, Uganda. Tel: +256 48520502  Email: ruharo@utlonline.co.ug

## Mid level Ophthalmic Personnel LATIN AMERICA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Santo Domingo, Dominican Republic</b> Hospital Dr. Elias Santana	Ophthalmic Assistant Programme	2 years		Dr. Juan Battle, Professor and Chairman Fantino Falco No. 5, Santo Domingo Dominican Republic Tel: +1-809-563-1324 / Fax: +1-809-544-1885 Email: jbattle@codetel.net.do
<b>Quito, Ecuador</b> Foundation Ophthalmologica of Valley	Ophthalmic Assistants Training	6 months	4	Dr. Filipe Chiriboga Foundation Ophthalmologica of Valley P.O. Box 17-22-20287, Quito, Ecuador Email: fechifov@interactive.net.ec
	Ophthalmic Nurses Training	11 months	2	

## EASTERN MEDITERRANEAN

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Karachi, Pakistan</b> Al-Ibrahim Eye Hospital	Ophthalmic Technician	1 year	20	Prof. Saleh Memon Medical Director  Al-Ibrahim Eye Hospital, Malir, Karachi Tel: + 92-21-4560708 Fax: +92-21-4560718 Email: aiehpk@yahoo.com
<b>Karachi, Pakistan</b> Prevention and Control of Blindness Cell	Ophthalmic Technician	1 year	20	Prof. Ziauddin Sheikh Dept. of Ophthalmology Civil Hospital, Karachi Tel: + 92-21-7775445 Fax: +92-21-7775445 Email: comeye@cyber.net.pk
	Refractionist	2 years	10	
<b>Lahore, Pakistan</b> Pakistan Institute of Community Ophthalmology	Ophthalmic Technician Refractionist	1 year 2 years	20 10	Prof. Asad Aslam Khan Project Director Punjab Institute of Preventive Ophthalmology, Mayo Hospital, Lahore  Tel: + 92-42-7355998 Fax: +92-42-7355998 Email: drasad@lhr.comsats.net.pk

## Mid level Ophthalmic Personnel EASTERN MEDITERRANEAN

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Peshawar, Pakistan</b> Pakistan Institute of Community Ophthalmology	Ophthalmic Technicians course	1 year 3 years	40 15	Dr. Khadija Nowaira Abdullah, Director PCVS Pakistan Institute of Community Ophthalmology Hayatabad Medical Complex P.O Box 125, GPO, Peshawar, Pakistan  Tel: +92-91-9217376 - 80 / 9217425 Fax: +92-91-9217413 Email: pico@pesh.pico.comsats.pk
	District Refractionist Course Ophthalmic Nurses Course	1 year	5	
<b>Rawalpindi, Pakistan</b> Al-Shifa Trust Eye Hospital	Ophthalmic Technicians	1 year	15	Dr. Wajid Ali Khan, Chief Consultant, Associate Dean, National Academy of Paramedics, Al-Shifa Trust Eye Hospital, Jhelum Road, Rawlapindi, Pakistan Tel: 092 51 5487820-24, Fax: 092 51 5487827; Email info@alshifa-eye.org.pk
	Ophthalmic Nursing	1 year 2 years	10 12	
	Optometry Orthoptics	1 year	3	

## SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Chittagong, Bangladesh</b> Chittagong Eye Infirmary & Training Complex	Long Courses			Dr. Muniruzaman Osmani Managing Trustee Chittagong Eye Infirmary and Training Complex P.O. Box 729, Pahartali Chittagong-4000, Bangladesh Tel.: +880-31-659017 / 19 Fax: +88-31-659020 Email: icocetc@spnetctg.com Website: www.eyefirmary.com
	Ophthalmic Paramedic Certificate Course	1 year	12	
	Ocular Microbiology & Laboratory	1 year	2	
	Short Courses			
	Refraction, Low Vision and Contact Lens Orthoptics Operation Theatre	6 months 6 months 3 months	8 4 4	
	Glaucoma	3 months	4	
Retina	3 months	4		
Ocular Laboratory	3 months	4		



## Mid level Ophthalmic Personnel SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<p><b>Hyderabad, India</b> L.V.Prasad Eye Institute</p>	<p>Eye Banking Techniques Training (Short term) Eye Banking Techniques and Management (Observership) Grief Counseling Ophthalmic Technicians Skills Refinement Programme Bio-medical cum Maintenance Technician Training Programme Patient Counselor Training Programm Medical Records Assistant Training Programme Stores Assistant Training Programme Optician Training Programme</p>	<p>3 months 1 week 1 month  4 months 6 months  e 6 months  3 months  3 months  6 months</p>	<p>12/year 2/month 12/year  12/year 12/year  6/year  12/year  12/year  4/year</p>	<p>Ramayamma International Eye Bank L.V.Prasad Eye Institute L.V. Prasad Marg, Banjara Hills Hyderabad 500 034, India Tel: +91-40-2354 8267 / Fax: +91-40-2354 8271 Email: rieb@lvpei.org / Website: www.lvpei.org</p> <p>ICARE, L.V.Prasad Eye Institute Post Bag # 1, Kismatpur B.O Rajendernagar P.O, Hyderabad - 500 030 Tel: +90-40-2401 1243 Fax: +90-40-2401 1293 Email: vilas@icare.stph.net</p>
<p><b>Madurai, India</b> Aravind Eye Hospital/ Lions Aravind Institute of Community Ophthalmology</p>	<p>Long term Courses PG Diploma in Optometry  PG Dip. in Ophthalmic Assistants Short term Courses Certificate Course for Clinical &amp; Supervisory Skills Development in Ophthalmic Paramedical Personnel  Certificate Course on Optical Dispensing</p>	<p>2 years (offered once a year, August) 2 years (offered once a year, August) 3 months (offered twice a year, April &amp; October)  3 months (July &amp; December)</p>	<p>10 per batch  10 per batch  8-10 per batch  7-9 per batch</p>	<p>Dr. Usha Kim Aravind Eye Hospital 1, Annanagar, Madurai - 625 020, Tamilnadu, India</p> <p>Ph: 91 452 5356100 Extn: 113 Fax: 91-452-2530984 Email: education@aravind.org</p>

## Mid level Ophthalmic Personnel SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Contd.,</b>	<p>Training course for Orthoptist</p> <p>Training course for Paediatric Nurse</p> <p>Training course for Paediatric Counsellors</p> <p>Certificate course in Fundus Fluorescein Angiography and Ultrasonography</p> <p>Certificate course on Instruments Maintenance</p> <p>Certificate course on Instruments Maintenance (for Ophthalmologists)</p>	<p>6 Months Jan &amp; July)</p> <p>3 months (Jan, Jun &amp; Sept)</p> <p>3 months (Jan, Jun &amp; Sept)</p> <p>2 months (1st of every month)</p> <p>6 weeks</p> <p>5 days (upon request)</p>	<p>1-2 per batch</p> <p>2-4 per batch</p> <p>1-2 per batch</p> <p>1 per batch</p> <p>6 per batch</p> <p>5 per batch</p>	<p>Dr. P. Vijayalakshmi Chief – Paediatric Ophthalmology</p> <p>Aravind Eye Hospital 1, Annanagar, Madurai - 625 020, Tamilnadu, India</p> <p>Ph: 91 452 5356100; Fax: 91 452 2530984 Email: <a href="mailto:childreneye@aravind.org">childreneye@aravind.org</a></p> <p>Dr.R.Kim CORE Faculty, TIFAC-CORE in Diabetic Retinopathy</p> <p>Aravind Eye Hospital 1, Annanagar, Madurai - 625 020, Tamilnadu, India Ph: 91 452 5356100; Fax: 91 452 2530984 Email: <a href="mailto:uma@aravind.org">uma@aravind.org</a></p> <p>Prof. V. Srinivasan LAICO, 72, Kuruvikaran Salai, Gandhinagar, Madurai - 625 020, Tamilnadu, India Ph: 91-452-5356100; Extn: 429, Fax: 91-452-2530984 Email: <a href="mailto:v.srinivasan@aravind.org">v.srinivasan@aravind.org</a></p>
<b>Mumbai, India</b> Premila Vithaldas Polytechnic	Diploma in Ophthalmic Techniques	3 years	25/year	<p>Ms. Radha Sinha Principal SNTD Women's University, Santacruz Mumbai - 400 049, India</p> <p>Tel: +91-22-660-5126 / 660-8676 Fax: +91-22-660-7668</p> <p>Email: <a href="mailto:pvpelex@bom3.vsnl.net.in">pvpelex@bom3.vsnl.net.in</a></p>

## Mid level Ophthalmic Personnel SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>New Delhi, India</b> Venu Eye Institute and Research Centre	Diploma in Ophthalmic Techniques* Special Ophthalmic Paramedics Course Advanced ophthalmic Nurses Course Ophthalmic O.T Technicians Training Course Instrument Maintenance Course Contact Lens Training	3 years 8 months 3 months 6 months 6 weeks 15 days	10 10 2 4 2 1	Dr. Jeena Mascarenhas Consultant – CME Department Venu Eye Institute and Research Centre 1/31, Sheikh Sarai Institutional Area, Phase – 2, New Delhi – 110 017 Tel: +91-11-2925 1951 / 2925 0757 / 2925 2417 Fax: +91-11-2925 2370 / Email: vcs@spectranet.com  (* Open to Indian Nationals only)
<b>Tiruchirapalli, India</b> Joseph Eye Hospital	Certificate Course in Ophthalmic Technology Diploma in Ophthalmic Technology	1 year 2 years	12 12	Dr. Nelson Jesudasan - Director Joseph Eye Hospital, Institute of Ophthalmology, P.B.No. 138 Tiruchirapalli 621 001, India Tel: +91-431-2460622 / 2462862 Fax: +91-431-2415922 Email: jehtry@eth.net

## Eye Care Management Personnel <sup>AFRICA</sup>

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Durban, South Africa</b> Edendale Hospital	Certificate Course in Planning and Management of VISION 2020 Programmes	10 weeks	10	Dr. Colin Cook Kwazulu-Natal Blindness Prevention Programme, P.O. Box 899, Hilton, 3245 South Africa Email: myrna@mweb.co.za
<b>Moshi, Tanzania</b> Kilimanjaro Centre for Community Ophthalmology	Organisational & Financial Management to achieve VISION 2020 in Africa How to use a manager to achieve VISION 2020 in Africa  Strategies to "Bridge" Communities and Eye Care Providers to Achieve VISION 2020 in Africa	2 weeks 1 week  1 week	15 15  15	Co-Director Kilimanjaro Centre for Community Ophthalmology Tumaini University / KCMC PO Box 2254, Moshi, Tanzania Tel: +255-27-2753547 Email: pcourtright@kcco.net

## EASTERN MEDITERRANEAN

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Peshawar, Pakistan</b> Pakistan Institute of Community Ophthalmology	Short Course on Planning in Eye Care Short Course on Communication Skills Short Course on Management in Eye care	1 week 1 week 1 week	30 30 30	Dr. Mohammad Babar Qureshi Director Academics, Pakistan Institute of Community Ophthalmology Hayatabad Medical Complex P.O Box 125, GPO, Peshawar, Pakistan  Tel: +92-91-9217376 - 80/ 9217425 Fax: +92-91-9217413 Email: pico@pes.comsats.net.pk

## Eye Care Management Personnel SOUTH EAST ASIA

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
<b>Hyderabad, India</b> L.V.Prasad Eye Institute	Eye-Care Manager Training Programme	1 year	12/year	ICARE, L.V.Prasad Eye Institute Post Bag # 1, Kismatpur B.O Rajendernagar P.O, Hyderabad - 500 030 Tel: +90-40-2401 1243 Fax: +90-40-2401 1293 Email: vilas@icare.stph.net
<b>Madurai, India</b> Aravind Eye Hospital/ Lions Aravind Institute of Community Ophthalmology	Postgraduate Diploma in Hospital Management	1 year	20	Mr. P. Rajendran LAICO-AEH, 72, Kuruvikaran Salai, Gandhi Nagar, Madurai- 625 020, Tamil Nadu, Tel: +91-452-535-6100 Fax: +91-452-253-0984 Email: courses@aravind.org
	Management Training & Systems Development for Hospital Administrators / Managers	6 weeks	10	Mr. Suresh Kumar (address same as above)
	Management Training for Eye Care Programme Managers	2 weeks	20	Mr. Keerti Pradhan (address same as above)
	Management Training for Ophthalmic Heads of Eye Hospitals	1 week	20	Ms. G.K. Veni (address same as above)
	Fellowship in Eye Hospital Management	1 year	7	Mr. Sanil Joseph (address same as above)

## VISION 2020 Calendar of Events for year 2006

MONTH	DATE	PLACE	CONTACT PERSONS	EVENT
February	7-8	Ghana, Accra	ICEH	Stakeholders planning
	Feb 27 - Mar 1	South Africa, Cape Town	Dr Colin Cook	Registrar CEH training
	Feb 27 - Mar 3	Chad, N'djamena		National planning
March	20-24	Niger		National planning
	20-25	India, Delhi	G V Murthy	Refractive error – identifying information needs for programs, and designing studies to address them
	21-23	Saudi-Arabia, Riyadh		National planning
	27-31	Cape Verde, Praia	Odusote	National VISION 2020 Plans for Lusophone countries
		Nigeria	Odusote Ebri	Training of Trainers in CEH for Optometrists
		Shenyang, Liaoning Province	Provincial Health Bureau	Develop VISION 2020 provincial plan
		Nicaragua, Managua		National planning
April	19-20	Chengdu, Sichuan Province	Provincial Health Bureau	Develop VISION 2020 provincial plan
	24-27	East Africa, Moshi	Dr Paul Courtright	Training of Trainers from Ethiopia, Kenya, Mozambique, Tanzania and Uganda for District 2020 workshops
		Ghana	ICEH	District-level Operational Planning
		Malawi, Lilongwe	Dr Moses Chirambo	Malawi, Zambia, Zimbabwe district planning
May		Uganda, Kampala	Dr Paul Courtright	Review of 1st 5 year VISION 2020 plan
		Mozambique x 2	Dr Paul Courtright	District planning (2 provinces)
	19-12	Libya - Tripoli		National planning

### Dates to be Announced

MONTH	DATE	PLACE	CONTACT PERSONS	EVENT
	29-31	Iran, Teheran	Dr Babar Qureshi	National planning
		Taiyuan, Shanxi Province	Provincial Health Bureau	Develop VISION 2020 provincial plan
		Xining, Qinhai Province	Provincial Health Bureau	Develop VISION 2020 provincial plan
June	25-29	Czech Rep, Prague	Dr Ivo Kocur	Advocacy for 5 countries
	27-30	Madagascar, Antananarivo,	Dr Robson	Madagascar district planning
		Kunming, Yunnan Province	Provincial Health Bureau	Develop VISION 2020 provincial plan
		South Africa, Cape Town	Dr Kluever	South Africa district planning
July	3-7	London, LSHTM,	Graham Dyer	Planning VISION 2020 for NGOs
	24-28	Angola, Luanda	Brechet	Angola national planning
		Togo	Sacko	District-level planning
		Urumqi, Xinjiang Uger Autonomous Region	Provincial Health Bureau	Develop VISION 2020 provincial plan
August	7-10	Dubai		National planning
	20-31	Syria		Damascus Sensitization on VISION 2020
		Lanzhou, Gansu Province	Provincial Health Bureau	Develop VISION 2020 provincial plan
September	14-16	Lithuania, Vilnius,		Increase awareness of ROP
	25-29	Tanzania, Arusha,	Dr Paul Courtright	District planning (2-3 districts)
	28-29	Mexico	CBM Mexico	District planning
		Tanzania	Dr Paul Courtright	CEH course 8 weeks
		Afghanistan, Kabul	Dr Babar Qureshi	Sensitization on VISION 2020
		Bolivia	CBM Quito	National planning
October		Chile	CBM Quito	Southern countries
November		Brazil	CBM Quito	District planning

## *Annex 5: Additional information about training courses*

### Additional data on training institutes. (As of June 2006)

#### Ophthalmology

EMRO:

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
Al-Asema, Kuwait Al-Bahar Ophthalmic Centre	<i>Degree in Ophthalmology</i>	5 years	3-4	
Triploi, Libya Triploi Eye Hospital	Diploma in Ophthalmology	4 years	93	

SEARO:

Location & Institution	Name of the Programme	Duration	No. of Positions	Contact
Dhaka, Bangladesh MA Isphanani and Islamia Eye Hospital	<i>Diploma in Ophthalmology</i> Fellowship in Cornea MSICS Training IOL Micro Surgery Training	1 year 8 weeks 4 weeks 10 weeks	6-7 02 12 16	Mrs. Zahida Isphanani, Advisor Farm Gate Dhaka <a href="mailto:zdee@bangla.net">zdee@bangla.net</a> or <a href="mailto:ieh@bdcom.com">ieh@bdcom.com</a>
Dhaka, BSMMU	DO MSc in Ophthalmology FCPS (part II)	1 year 3 years	05 05 05	Prof: MD Salehuddin <a href="mailto:Ophthalmology.bsmmu@yahoo.com">Ophthalmology.bsmmu@yahoo.com</a>
Dhaka, National Institute of Ophthalmology	DO MSc in Ophthalmology FCPS (part II) IOL Micro Surgery Training PHACO Training	1 year 3 years 10 weeks 8 weeks	10-12 05 05 16 06	Prof: Maruf Ali, Director Sher-e-Bangla Nagar
Dhaka, Dhaka Medical College Hospital	DO MS in Ophthalmology	1 year 3 years	05 05	Prof: Din Mohammad Noor-ul-Haq

Dhaka, Lions Eye Hospital	DO	1 year	05	Prof: Haleem Khan
Dhaka, Sir Samiullah Medical College Hospital	MSc in Ophthalmology	3 years	05	Prof: Arif Miah
Dhaka, BIRDEM	DO	1 year	05	Prof: M Syed-ur-Rheman
Sylhet, Sylhet Osmani Medical College	MSc in Ophthalmology	3 years	03	
Chittagong, Chittagong Medical College Hospital	MSc in Ophthalmology	3 years	03	
Mymensingh, Mymensingh Medical College Hospital	MSc in Ophthalmology	3 years	03	
Rangpur, Rangpur Medical College Hospital	DO	3 years	03	
Barisal, Barisal Medical College Hospital	DO	3 years	03	
Chittagong, Eye Infirmary and Training Complex and Institute of Community Ophthalmology	Diploma in Community Ophthalmology	2 years	08	Prof: Rabiul Husain, MD CEITC, Pahartali icocaitc@spnetctg.com



## WPR

Location & Institution	Name Of The programme	Duration	No. of Positions	Contact
<b>Cambodia:</b>				
Takeo Eye Hospital.	Basic Eye Doctor DO BEN.	18 months. 24 months 9 months.	3 3 8_11	Caritas/CBM cariteh@camintel.com
COA(Cambodian Optometrist Association)(PhnomPenh)	Nurse. Refractionist.	6 months.	5	COA/CBM.
Kompot Nursing School	Ophthalmic nursing.	8 months.	10.	Do Seiha campbl@online.com.kh
Caritad RBC	Orientation and Mobility Trainers.	2 months.	As requested.	
Takeo Eye Hospital+ Kompot Nursing School	DON.	11 months	5	Caritas/CBM
<b>Vietnam:</b>				
VNIO(Ha_Noi-Vietnam)	Ophthalmic Nurses.	6 months.	50	Prof Ton Thi Kim Thanh.
Eye Care Hospital Of Ho Chi Minh City.	Ophthalmic nurses. Refractionist.	6 months. 6 months.	50. 40	Dr Tran Thi Phuong Thu.
VNIO and Ha Noi Medical School.	Ph.D Ophthalmology.	5 years.	5.	Prof Ton Thi Kim Thanh.
Ha noi Medical University.	Msc Ophthalmology. Ophthalmologist 1 <sup>st</sup> degree. Ophthalmologist 2 <sup>nd</sup> degree. Basic Eye Doctor.	2 years. 2 years. 2 years. 1 year(10 months)	10. 50 5. 50.	Prof Ton Thi Kim Thanh.
<b>Soloman islands:</b>				
PacificEye Institute(Honiara)	Postgraduate Diploma Of Eye care(to nurses mainly) D.O	1 year.  1year.	6-14  2-6	Koni Szetu resorce@pacificeyeinstitute.com.sb

	Masters-In Ophthalmology	4 years.	2-6	
Australia and Newzealand.				
RANZCO	VTP Fellowship.	5 years.	28	<ranzco@ranzco.edu>
Save Sight Institute.(Sydney)	Diploma  Masters In Basic Sciences.	1year  3 years.	2  2	Prof Billson.
Otago University.(Dunedin,NZ)	Diploma in Basic Sciences.	1 year	–	Dr Gordon Sanderson. <Gordon.sanderson@stonebow.otago.ac.nz>

## References

---

- <sup>1</sup> WHO. Global Initiative for the elimination of avoidable blindness. WHO/PBL/97.61 Rev 1.1997
- <sup>2</sup> WHO. Working together for health. The world health report, 2006. WHO. Geneva.
- <sup>3</sup> Vision 2020 workshops Yemen, Saudi Arabia, Libya and Kuwait
- <sup>4</sup> Vision 2020, The Right to Sight. Latin America. Information Available at [www.v2020la.org](http://www.v2020la.org)
- <sup>5</sup> World Ophthalmology Congress 2006. Data presented by Dr. Koby Jacob Pe'er, Chairman Committee for countries with minimal presence of ophthalmology. Sao Paulo, Brazil. 18<sup>th</sup>-23<sup>rd</sup> February 2006.