Addressing Uncorrected Refractive Error Through Human Resource Development in the Context of Mozambique

Stephen Thompson
*Technological University Dublin*, stephenjamesthompson@hotmail.co.uk

James Loughman
*Technological University Dublin*, james.loughman@tudublin.ie

Prasidh Ramson

Luigi Bilotto

Kovin Naidoo

Follow this and additional works at: [https://arrow.tudublin.ie/otpomcon](https://arrow.tudublin.ie/otpomcon)

Part of the Optometry Commons

**Recommended Citation**


This Conference Paper is brought to you for free and open access by ARROW@TU Dublin. It has been accepted for inclusion in Conference Papers by an authorized administrator of ARROW@TU Dublin. For more information, please contact yvonne.desmond@dit.ie, arrow.admin@dit.ie, brian.widdis@dit.ie.

This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 License](https://creativecommons.org/licenses/by-nc-sa/3.0/)
Addressing uncorrected refractive error through Human Resource Development in the context of Mozambique

Stephen Thompson MSc BSc
Introduction to MEP

• The Mozambique Eyecare Project aims to provide a sustainable solution to the problem of avoidable blindness through optometric education.

• Address the significant barrier of local human resource capacity development through:
  - Optometric Education
  - Infrastructure
  - Research
  - Advocacy

• Enhance future collaborations by developing capacity in partner institutions
# Introduction to Mozambique

<table>
<thead>
<tr>
<th></th>
<th>Mozambique</th>
<th>Rep. of Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area (sq km)</td>
<td>799,380</td>
<td>70,273</td>
</tr>
<tr>
<td>GDP per capita (PPP)</td>
<td>$1,100</td>
<td>$39,500</td>
</tr>
<tr>
<td>GDP real growth rate</td>
<td>7.2%</td>
<td>1%</td>
</tr>
<tr>
<td>Population</td>
<td>20,579,365</td>
<td>4,588,252</td>
</tr>
<tr>
<td>HDI ranking 2011</td>
<td>184</td>
<td>7</td>
</tr>
</tbody>
</table>

MOZAMBIQUE EYECARE PROJECT

Methodology

• A national situational analysis was completed
• Requested by Ministry of Health (MISAU)
• Funded and facilitated by Mozambique Eye Care Coalition (MECC)
• International Agency for Prevention of Blindness (IAPB) tools used
• Current eye care services recorded including human resource and equipment
• Population data were gathered

• Data analysed against VISION 2020 Human Resource targets

MOZAMBIQUE EYECARE PROJECT

- Cabo Delgado
- Gaza
- Inhambane
- Manica
- Nampula
- Niassa
- Sofala
- Tete
- Zambezia
Methodology continued...

- Maputo Province (and city) were not included in the analysis due to:
  - Lack of data
  - Private clinics/shops
  - Proximity to South Africa
Results

• According to IAPBa targets each country should have at least:

  o 1 trained and functional person who can refract per 100,000 people by 2010
  o 1 trained and functional person who can refract per 50,000 people by 2020

• Population of Mozambique in 2007b = 20,278,361

• People who can refract by 2010 = 203

• People who can refract by 2020 = 406

Current HR

<table>
<thead>
<tr>
<th>Province</th>
<th>Ophthalmologists</th>
<th>Ophthalmic Technicians</th>
<th>Refractionists</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Delgado</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Gaza</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Inhambane</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Manica</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nampula</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Niasa</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Sofala</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Tete</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Zambezia</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Province</td>
<td>Population</td>
<td>Current HR</td>
<td>Current Ratio HR to population</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>C. Delgado</td>
<td>1,606,568</td>
<td>4</td>
<td>401,642</td>
</tr>
<tr>
<td>Gaza</td>
<td>1,228,514</td>
<td>6</td>
<td>204,752</td>
</tr>
<tr>
<td>Inhambane</td>
<td>1,271,818</td>
<td>5</td>
<td>254,364</td>
</tr>
<tr>
<td>Manica</td>
<td>1,438,386</td>
<td>5</td>
<td>287,677</td>
</tr>
<tr>
<td>Nampula</td>
<td>3,985,613</td>
<td>11</td>
<td>362,328</td>
</tr>
<tr>
<td>Niassa</td>
<td>1,170,783</td>
<td>8</td>
<td>146,348</td>
</tr>
<tr>
<td>Sofala</td>
<td>1,642,920</td>
<td>6</td>
<td>273,820</td>
</tr>
<tr>
<td>Tete</td>
<td>1,783,967</td>
<td>3</td>
<td>594,656</td>
</tr>
<tr>
<td>Zambezia</td>
<td>3,849,455</td>
<td>2</td>
<td>1,924,728</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17,978,024</strong></td>
<td><strong>50</strong></td>
<td><strong>359,560</strong></td>
</tr>
</tbody>
</table>

MOZAMBIQUE EYECARE PROJECT

Current HR / Desired V2020 HR

No. of people refracting

Province

Current HR

HR needed by 2020 (less existing HR)
MOZAMBIQUE EYECARE PROJECT

Human Resource Development

- Optometry degree at Universidade Lurio
  - Four year programme
  - 7 students graduate in December 2012 and enter public system
  - 15 students per year every year after
  - Average year group 20 students (some may go private/change career)
  - By 2020 112 Optometrists will be available for the public sector
Human Resource Development continued

• Ophthalmic Technician training in Beira and Nampula
  • LFTW and Sightsavers
  • Refraction element supported by MEP

• Training of Ophthalmologists
  • Ministry of Health
  • On average 1 per year

• Support from foreign Ophthalmologists

• Up-skilling of existing Ophthalmic Technicians
  • MEP supporting ODM in Inhambane Province
  • High level of training but unrecognised
### Refractions, glasses dispensed and conversion rate

<table>
<thead>
<tr>
<th>Province</th>
<th>Refractions in 2011</th>
<th>Glasses dispensed in 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Delgado</td>
<td>1,640</td>
<td>998</td>
</tr>
<tr>
<td>Gaza</td>
<td>2,836</td>
<td>0</td>
</tr>
<tr>
<td>Inhambane</td>
<td>664</td>
<td>454</td>
</tr>
<tr>
<td>Manica</td>
<td>2,629</td>
<td>596</td>
</tr>
<tr>
<td>Nampula</td>
<td>14,092</td>
<td>0</td>
</tr>
<tr>
<td>Niassa</td>
<td>2,335</td>
<td>0</td>
</tr>
<tr>
<td>Sofala</td>
<td>5,887</td>
<td>1,077</td>
</tr>
<tr>
<td>Tete</td>
<td>181</td>
<td>0</td>
</tr>
<tr>
<td>Zambezia</td>
<td>1,551</td>
<td>641</td>
</tr>
</tbody>
</table>

**Conversion rate (%)**

- C. Delgado: 59.9%
- Gaza: 0%
- Inhambane: 67.8%
- Manica: 22.8%
- Nampula: 0%
- Niassa: 0%
- Sofala: 18.2%
- Tete: 0%
- Zambezia: 41.2%
Barriers to refractive services

• Geography – eye care services tend to be based in urban centres

• Competing eye conditions

• Lack of expertise

• Lack of confidence for complex refractions

• Lack of equipment (specifically glazing machines)

• Population lack knowledge that the service exists
Conclusions

• The situational analysis has indicated a lack of available personnel to address URE

• The Optometrists training at Universidade Lúrio will make an important contribution to reducing the burden of URE in Mozambique

• Other barriers apart from HRD exist, including lack of equipment, and must be addressed

• More research needed to determine the refraction capacity amongst existing personnel
Special thanks

• Mozambican Ministry of Health (MISAU) who requested the situational analysis

• The Mozambique Eye Care Coalition (MECC) partners who funded and facilitated the situational analysis

• Priya Morjaria (International Centre for Eye Health) was hired as a consultant for the situational analysis
Thank you for listening

Stephen Thompson BSc MSc a, b, c
Project Manager for the Mozambique Eyecare Project
Email: stephen@iceeafrica.co.za       Tel: +258 826862446

Co-authors
James Loughman a, b PhD, FAOI, Prasidh Ramson b, c BSc, B.Optom,
Luigi Bilotto b, c, d MSc OD, Kovin Naidoo b, c, d OD MPH, PhD FAAO,

a. Dublin Institute of Technology
b. African Vision Research Institute
c. International Centre for Eyecare Education
d. University of KwaZulu-Natal