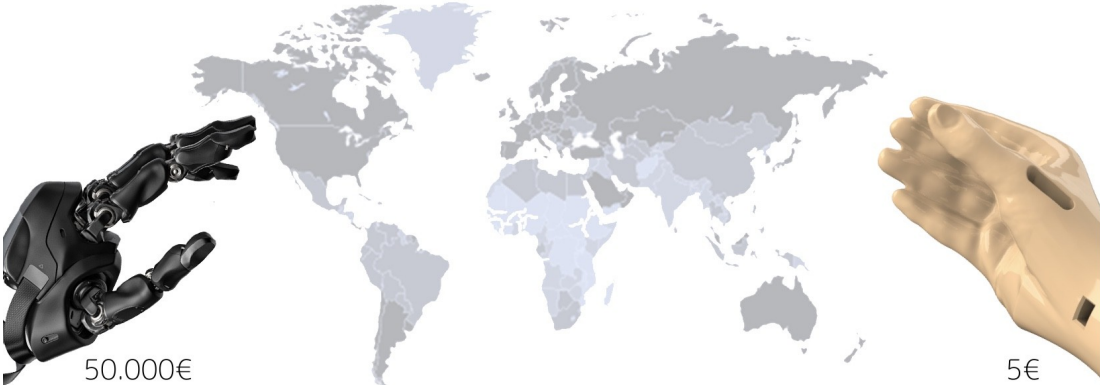
PROSTHETICS IN DEVELOPED NATIONS VS. LOW-INCOME COUNTRIES

80% of amputees live in developing countries below the poverty line



Introduction

- Dr Viquar Qurashi
  - Trauma & orthopaedic surgeon in UK; 30+ years

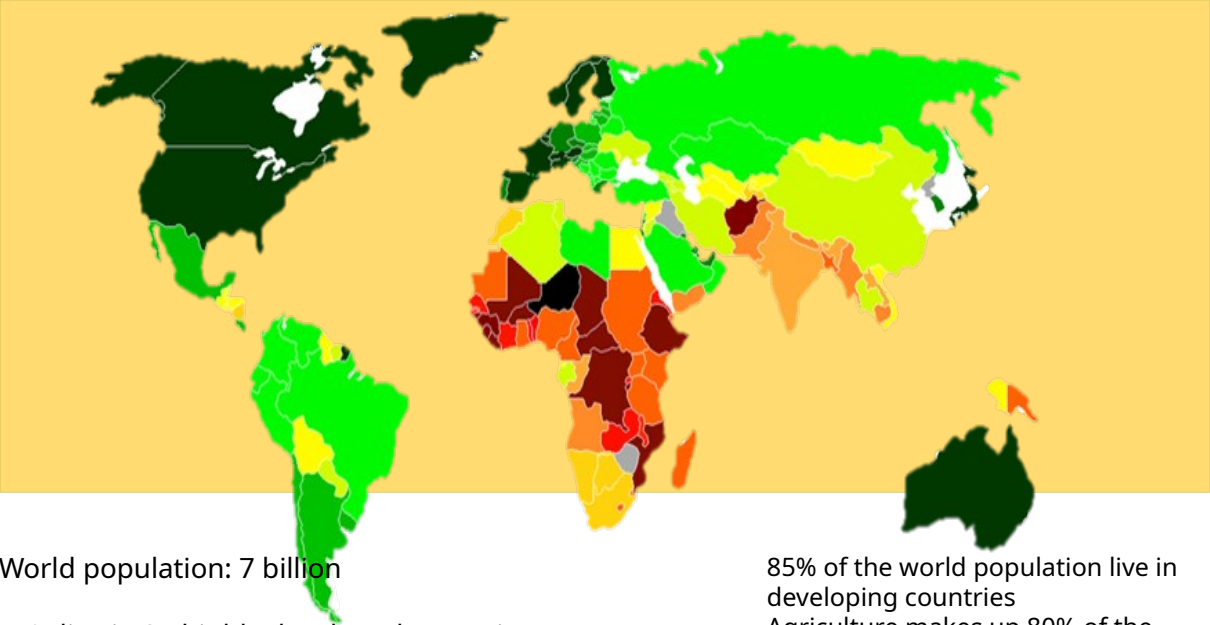
- Naya Qadam: “New step”
  - Founded in 2005 to aid survivors of Kashmir Earthquake

Prosthetics in developed nations vs low-income countries:
A practical perspective

Dr Viquar Qurashi
Orthopaedic Surgeon
Founder of Naya Qadam Charity

25 October 2023

HADRIAN'S



World population: 7 billion

15% live in 35 highly developed countries

85% of the world population live in developing countries

Agriculture makes up 80% of the economy

£50
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20

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dorset
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endolite

OR BE ER.

Prosthesis in high-income countries

- $40,000 – 50,000 per limb (C-Leg)

Type of Prosthetic Leg	Average Cost of a Prosthetic Leg
Basic below-the-knee prosthetic	$3,000 - $10,000
Flexible basic below-the-knee prosthetic	$7,000 - $12,000
Hydraulic or mechanical assistance	$20,000 - $40,000
Computerized prosthetic leg	$50,000

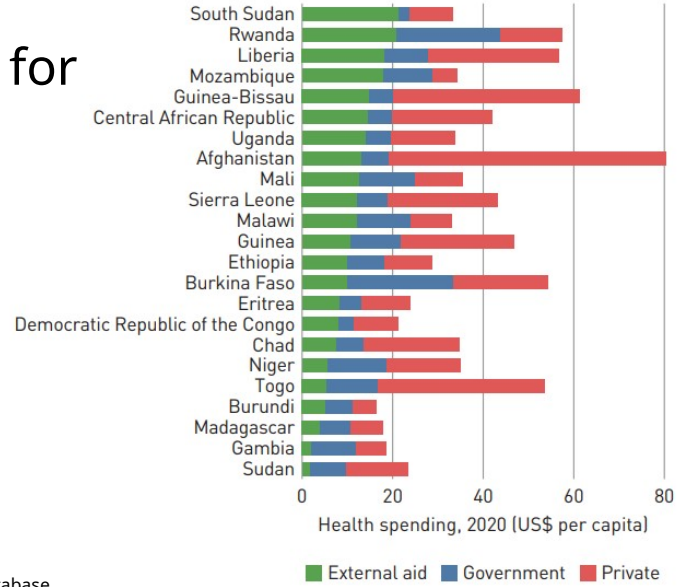
- Plus therapy costs

Source: Primecare Prosethetics, 2023

1 Healthcare resources

50% of world's population account for **4%** of global healthcare spend

Healthcare spending is **<$40/capita for** most low-income countries



Source: World Health Organisation Global Expenditure Database, 2022

4 Importing solutions & skills

Patients struggle to reach clinics

Solutions struggle to reach patients

Red tape & bureaucracy

Need for local jobs

Fluctuating exchange rate

Amputees in low-income countries have different requirements

High-income	Low-income
• High literacy	• Lower literacy
• Service economy	• Agricultural economy
• Urban	• Rural
• Aesthetics key	• Local customs regarding modesty & prayer

The solution?

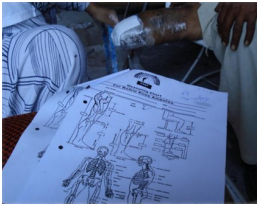
A case study from Naya Qadam

Low-income countries cannot access this

1. Poor healthcare resources
2. Weak public infrastructure
3. Different functional requirements
4. Challenges importing solutions or skills

Robust & functional

1. Durable (3 years)
2. Custom made
3. Flexible
4. Lightweight



Economic & sustainable

5. Local materials & manufacture
6. Low cost
7. Reproducable
8. Sustainable

mm/inch
21.58
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Modification

QINGQI

Nayan
dam Mobile

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Case study: lifetime costs of 6-year-old

- Life expectancy: 67 years old
- Needs ~17 leg prosthetics
  =(67 years – 6 years) / 3.5 years

Lifetime costs

C-Leg	Low-cost
$680,000	$1,530

Lower cost = scaled impact

C-Leg solution	Low-cost solution
• Mechanical, carbon fibre, Bluetooth, battery	• PVC • Locally sourced
• $40,000 / leg	• $90 / leg
• **3-4 year** lifetime	• **3-4 year** lifetime
• $1 million: **25 amputees**	• $1 million: **>11,000 amputees**

Rotary
CREATE HOPE in the WORLD
Artificial Limb Providing Camp
(नि:शुल्क कृतिम खुट्टा र हात प्रदान गर्ने शिविर)
INAUGURATION CEREMONY
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