

SITUATION OF THE RADIOTHERAPY EQUIPMENT IN LAC ACCORDING TO DIRAC

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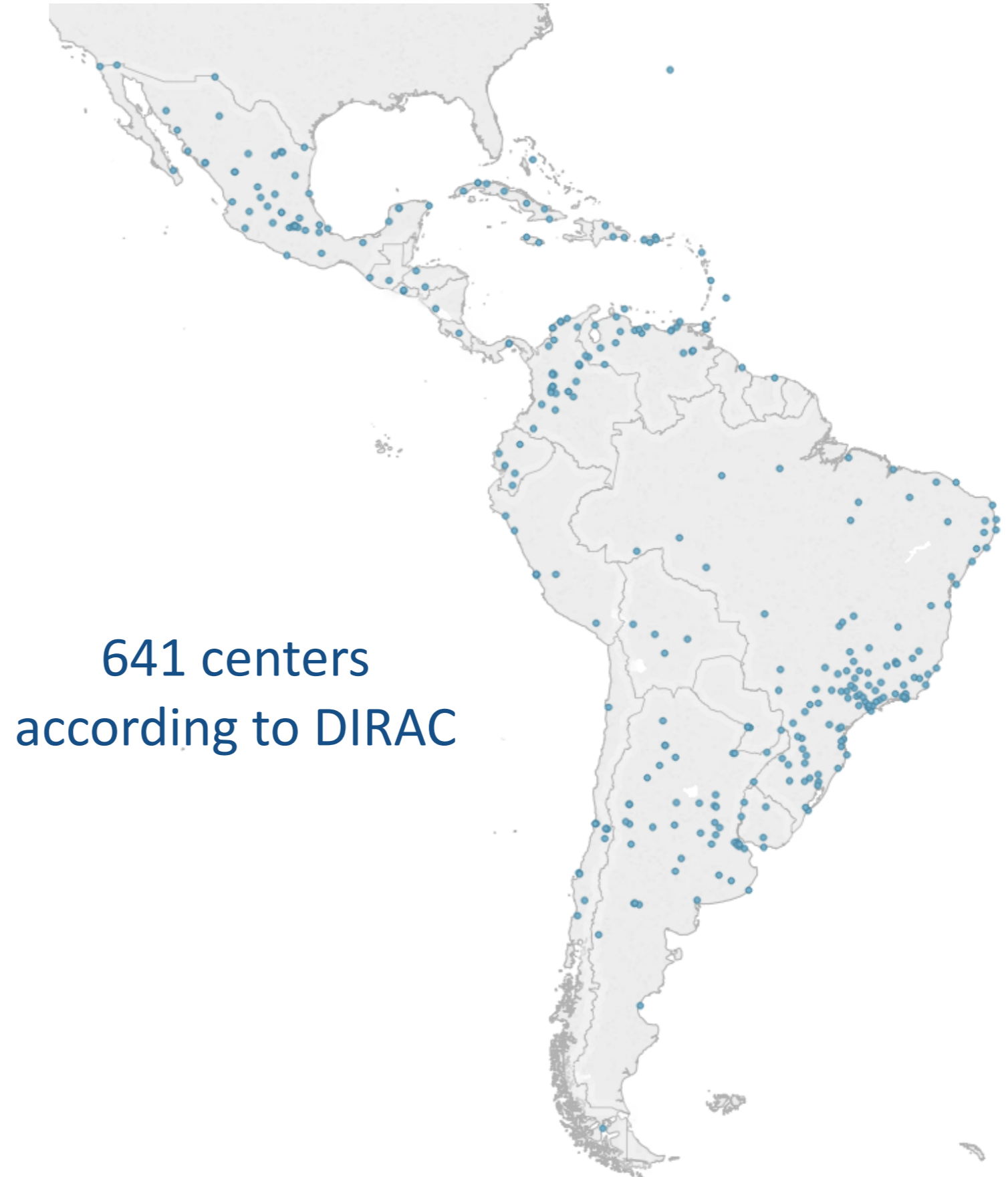
60 Years

Atoms for Peace and Development



NUMBER OF CENTERS ACCORDING TO DIRAC DATA

| Country | Centers |
|---------------------|---------|
| Brazil | 222 |
| Mexico | 92 |
| Argentina | 84 |
| Colombia | 56 |
| Venezuela | 44 |
| Chile | 23 |
| Peru | 21 |
| Ecuador | 12 |
| Dominican Republic | 12 |
| Uruguay | 10 |
| Cuba | 9 |
| Puerto Rico (US) | 7 |
| Guatemala | 7 |
| Bolivia | 6 |
| Honduras | 5 |
| Paraguay | 4 |
| Panama | 4 |
| El Salvador | 4 |
| Costa Rica | 4 |
| Trinidad and Tobago | 3 |
| Jamaica | 3 |
| Suriname | 1 |
| Nicaragua | 1 |
| Martinique (France) | 1 |
| Guyana | 1 |
| Curacao | 1 |
| Bermuda | 1 |
| Barbados | 1 |
| Bahamas | 1 |
| Antigua and Barbuda | 1 |



EQUIPMENT BY COUNTRY ACCORDING TO DIRAC DATA

| Country | MV units | LDRBT units | HDRBT units |
|---------------------|----------|-------------|-------------|
| Brazil | 351 | 17 | 99 |
| Mexico | 139 | 11 | 27 |
| Argentina | 118 | 17 | 7 |
| Colombia | 96 | 5 | 17 |
| Venezuela | 48 | 8 | 6 |
| Peru | 41 | 0 | 3 |
| Chile | 38 | 3 | 6 |
| Dominican Republic | 21 | 1 | 3 |
| Ecuador | 19 | 1 | 4 |
| Uruguay | 19 | 2 | 0 |
| Cuba | 18 | 0 | 4 |
| Puerto Rico (US) | 15 | 2 | 0 |
| El Salvador | 10 | 0 | 2 |
| Guatemala | 10 | 3 | 0 |
| Costa Rica | 8 | 0 | 1 |
| Panama | 8 | 0 | 1 |
| Bolivia | 7 | 3 | 1 |
| Honduras | 7 | 0 | 1 |
| Paraguay | 5 | 0 | 1 |
| Trinidad and Tobago | 5 | 3 | 2 |
| Jamaica | 4 | 1 | 0 |
| Nicaragua | 2 | 0 | 1 |
| Suriname | 2 | 0 | 1 |
| Antigua and Barbuda | 1 | 0 | 0 |
| Bahamas | 1 | 0 | 1 |
| Barbados | 1 | 0 | 1 |
| Curacao | 1 | 2 | 0 |
| Guyana | 1 | 0 | 1 |
| Martinique (France) | 1 | 0 | 0 |
| | 997 | 79 | 190 |

CALCULATING THE NEEDS BASED ON DIRAC DATA

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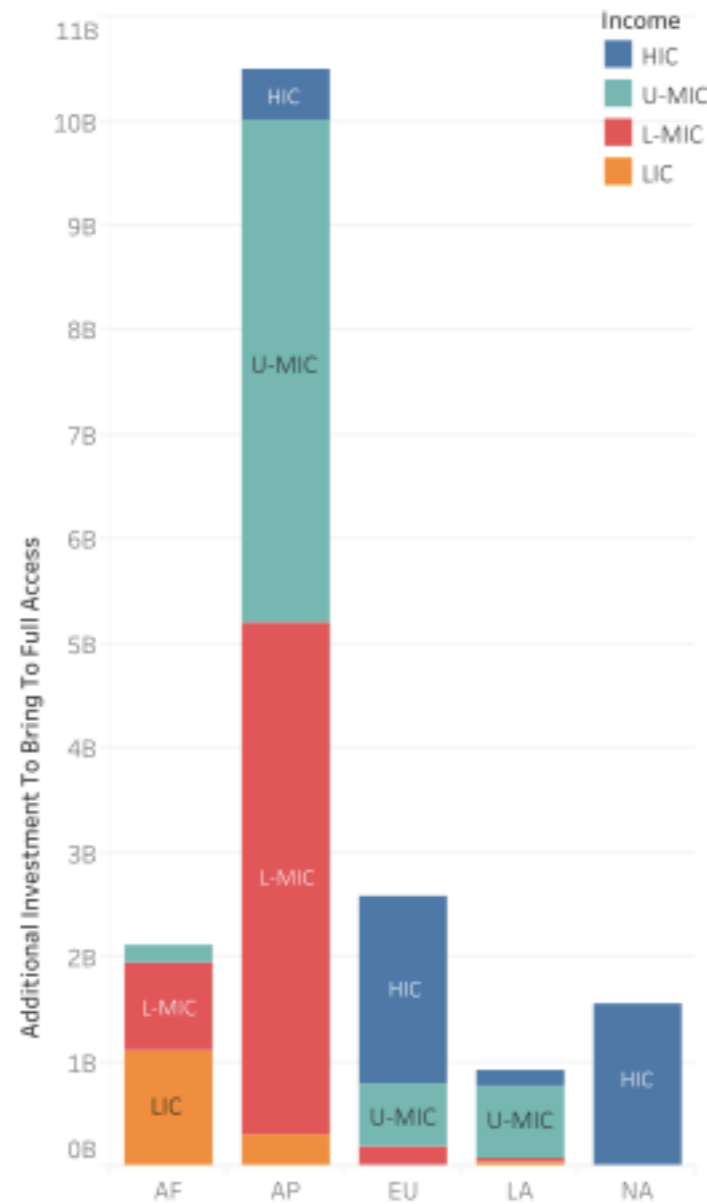
Table 1

Summary of actual status and total needs to provide full access to radiotherapy in the different regions of the world

| | Africa | Asia Pacific | Europe | Latin America | North America |
|---|---------|--------------|-----------|---------------|---------------|
| Population and courses | | | | | |
| Population (million) | 1070 | 4108 | 893 | 601 | 350 |
| Actual radiotherapy courses | 148 600 | 1 914 454 | 1 712 000 | 503 000 | 934 746 |
| Total radiotherapy courses | 437 624 | 3 277 387 | 1 884 893 | 573 385 | 934 746 |
| Resources | | | | | |
| Actual radiotherapy centres | 140 | 2585 | 1431 | 620 | 2787 |
| Total radiotherapy centres needed for full access (working 12 h/day) | 407 | 3503 | 1449 | 624 | 1200 |
| Actual megavoltage machines | 277 | 3894 | 3751 | 968 | 4243 |
| Percentage cobalt machines | 30.0% | 19.8% | 16.0% | 30.1% | 3.6% |
| Total megavoltage machines needed for full access (working 12 h/day) | 813 | 6406 | 4098 | 1106 | 2175 |
| Actual coverage of the needs | 34% | 61% | 92% | 88% | 195% |
| Costs | | | | | |
| Capital + training costs needed to bring to full access (million US\$) | 2118 | 10 497 | 2573 | 918 | 1558 |
| Actual operational costs/year (million US\$) | 182 | 4638 | 5868 | 975 | 6151 |
| Total operational costs/year (million US\$), assuming full access | 571 | 6968 | 6573 | 1192 | 6588 |
| Actual cost per radiotherapy course (US\$) | 1226 | 2423 | 3428 | 1939 | 6581 |
| Total cost per radiotherapy course (US\$), assuming full access | 1306 | 2126 | 3487 | 2079 | 7048 |

CALCULATING THE NEEDS BASED ON DIRAC DATA

Additional investment per geographical region



Additional investment per income group

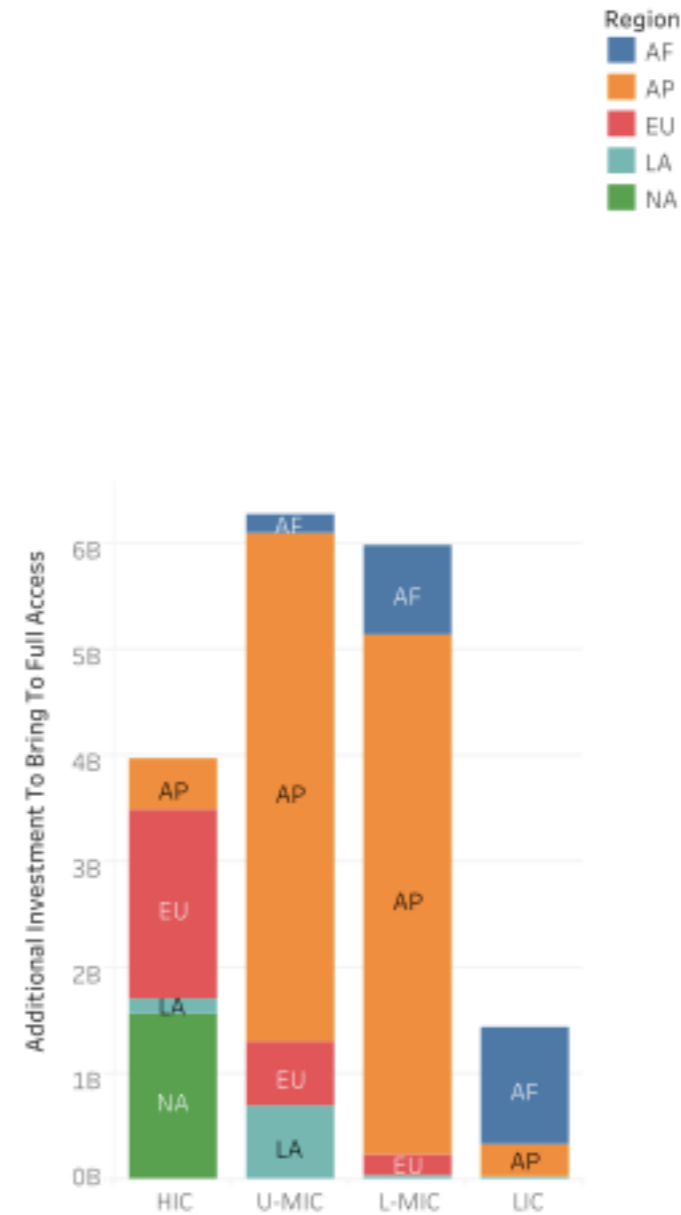


Fig 2. Additional investment needed to provide full access to radiotherapy by geographic region and by income group. AF, Africa; AP, Asia Pacific; EU, Europe; LA, Latin America; NA, North America; HIC, high-income country; U-MIC, upper middle-income country; L-MIC, lower middle-income country; LIC, low-income country.

CALCULATING THE NEEDS BASED ON DIRAC DATA

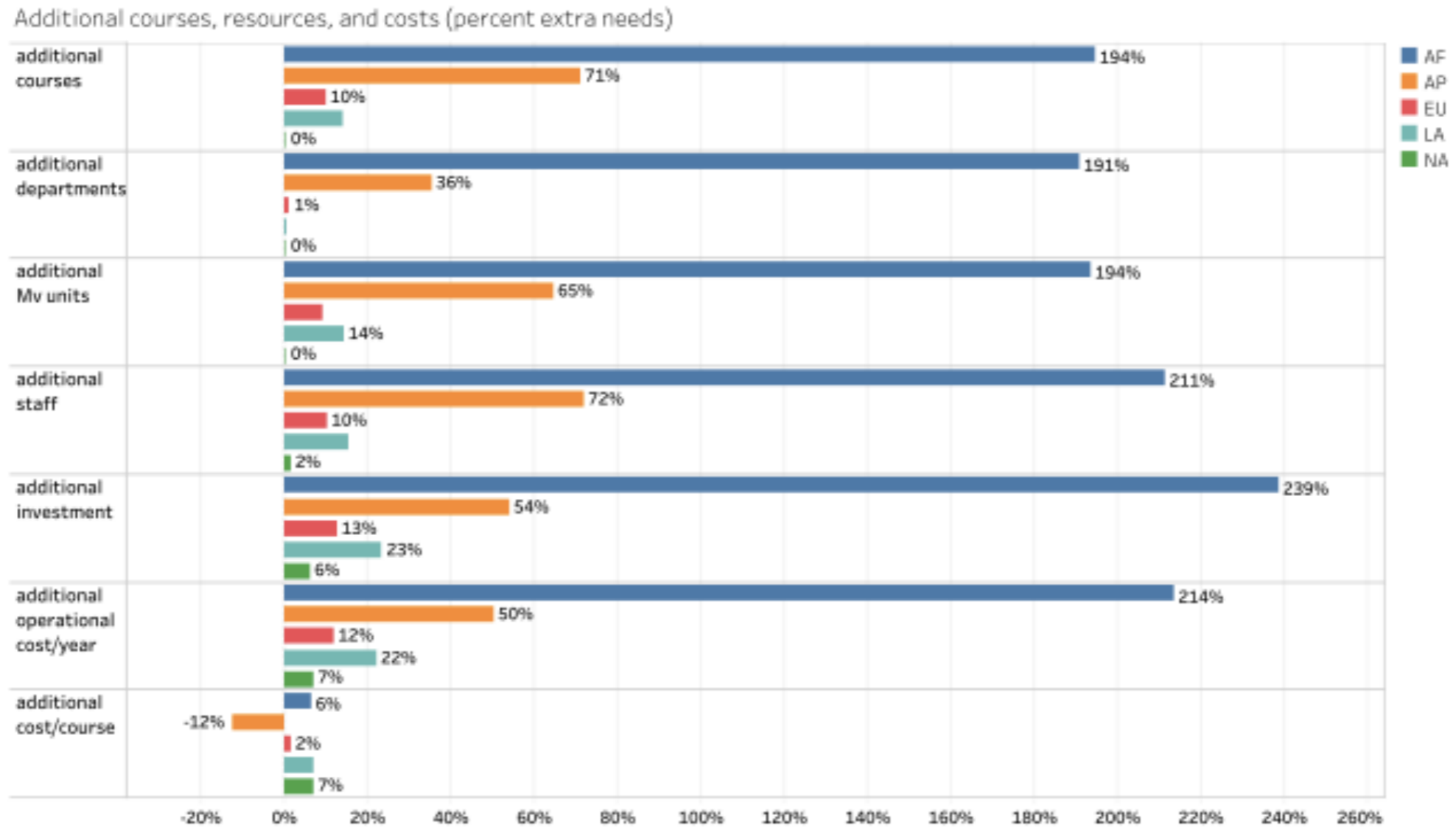


Fig 3. Additional courses, resources and costs (percentage extra needs). AF, Africa; AP, Asia Pacific; EU, Europe; LA, Latin America; NA, North America.

CONCLUSIONS - DIRAC IN LAC

- 641 centers according to DIRAC
- 997 MV units (LINAC + Cobalts)
- Small countries well updated
- Large countries more problematic
- DIRAC is critical for public health planning
- Data quality is essential for adequate planning
- Your contribution to DIRAC is needed...