Science and innovation for development

A study into the contribution and complementarity of EU international research cooperation

Dr. Ir. Paul G.H. Engel
ECDPM Senior Fellow

Prof dr. Giorgia Giovannetti
University of Firenze
FP7 – Widening the European Research Area (ERA)

All grants including third countries, 2007-2013
Partners in DC received 2,184 grants (41% of all grants to Third Countries)
Developing countries participating in FP7 projects

- 2184 FP7 grant agreements with partners in DC; of which in Africa (56%), Latin America (34%) and South East Asia (11%),
- Distributed over 71 countries, on average 31 grants per country. Emerging economies on average some 180 grants.
- FP7 grants to partners in DC cover 73% of total research costs
Meeting EU geographic and thematic development priorities

- FP7 activities with partners in developing countries show a strong bias towards cooperating with emerging countries and very limited alignment with the EU development objective to work more with LICs/LDCs.
- Nevertheless, FP7 has shown that a more intensive engagement with partners in LICs/LDCs is possible, particularly through regional research networks.
- FP7 activities show a remarkable level of thematic consistency with the 2030 Sustainable Development Goals (SDGs)
- The wide variety of concrete results that feed into national policy and development processes, illustrates that if research projects respond to DC researchers’ interests and national research agenda’s, their contribution to national development processes can be effective.
Alignment of research collaboration with global challenges, per region

- **Latin America**: Cities (SDG 11), Climate Change (SDG 13), Terrestrial Ecosystems (SDG 15) and Global partnership (SDG 17).

- **North Africa**: besides Health (SDG3) and Global Partnership (SDG 17), Infrastructure & Industrialization (SDG 10) and Oceans and Marine Resources (SDG 14) most frequently addressed.

- **West Africa**, besides Health (SDG 3), the Eradication of Hunger/Food Security and Agriculture (SDG 2), Water and Sanitation (SDG 12), Peaceful and Inclusive Societies (SDG 16) and Global Partnership (SDG 17).

- **East and Southern Africa**, besides Health (SDG 3), research collaboration seems to be focused most on Infrastructure and Industrialization (SDG 10), Climate Change (SDG 13) and Terrestrial Ecosystems (SDG 15).

- **South East Asia** - again besides Health (SDG 3) - research collaboration is most frequent on Energy for All (SDG 7), Cities (SDG 11) and Peaceful and Inclusive Societies (SDG 16).
Contribution analysis, sample projects/countries

<table>
<thead>
<tr>
<th>Region/country</th>
<th>Total project sample reviewed</th>
<th>DC development policy</th>
<th>DC research policy</th>
<th>innovation by DC stakeholders and businesses</th>
<th>EU-DC R&amp;I networking/partnership building</th>
<th>DC research capacity development</th>
<th>Other</th>
<th>Total contributions per region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>37</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21%</td>
<td>7%</td>
<td>28%</td>
<td>31%</td>
<td>3%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>Africa:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>33</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>West</td>
<td>28</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>East and Southern</td>
<td>36</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>Africa total</td>
<td>97</td>
<td>15</td>
<td>12</td>
<td>16</td>
<td>15</td>
<td>16</td>
<td>7</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19%</td>
<td>15%</td>
<td>20%</td>
<td>19%</td>
<td>20%</td>
<td>9%</td>
<td>100%</td>
</tr>
<tr>
<td>South East Asia</td>
<td>33</td>
<td>9</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27%</td>
<td>18%</td>
<td>24%</td>
<td>15%</td>
<td>12%</td>
<td>3%</td>
<td>100%</td>
</tr>
<tr>
<td>Total country sample size</td>
<td>167</td>
<td>30</td>
<td>20</td>
<td>32</td>
<td>29</td>
<td>21</td>
<td>11</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21%</td>
<td>14%</td>
<td>22%</td>
<td>20%</td>
<td>15%</td>
<td>8%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Meeting the EU R&I policy objectives

- About 20% of the FP7 activities from the project sample actively supported EU-DC networking and partnership building (ranging from 15% in South East Asia to 31% in Latin America).
- Contributions to DC research and innovation capacity development are mentioned in about 15% of the projects (ranging from 20% in Africa to 3% in Latin America).
- Contributions to EU-DC policy dialogue are mentioned systematically in research projects.
- FP7 activities show a remarkable level of thematic consistency with the 2030 Sustainable Development Goals (SDGs), but less with the EU development objective to work more with LICs/LDCs.
- The wide variety of concrete results that feed into national policy and development processes, illustrates that if research projects respond to DC researchers’ interests and national research agendas, their contribution to national development...
Meeting the EU R&I results objectives

- Almost all projects specified likely contributions to DC development policy, DC research policy, or DC multi-stakeholder innovation processes.
- The thrust to contribute to national and regional networks and partnerships seems to be less pronounced than the one to build bi-regional relations with Europe.
- The relative proportion of EU research funding versus the resources the country itself invests in its research does not suggest a strong investment in strengthening research institutions in general.
- This does not preclude EU funds to contribute to strengthening individual institutions, for example, where an institution receives various grants over a longer period of time.
Four main lessons learned

- Cooperation between EU and developing and emerging economies on Research and Innovation contributes to achieving EU thematic development objectives, and the Sustainable Development Goals.
- Developing countries need to have a minimum level of human capital, capacity and institutional infrastructure to be able to efficiently use research and innovation funding and to ensure development outcomes and impact.
- Below the threshold, the likelihood of being selected as research partner is low, co-financing creates huge impediments and the spillovers for the society are likely to be irrelevant.
- Hence, the effectiveness of EU R&I contributions is heavily conditioned by the strength and functioning of the National Research and Innovation System.
- In all key policy areas, possibilities exist for strengthening the development outcomes and impact of EU-supported research and innovation through a more differentiated approach that takes into account the level of development of the National R&I System in the partner country.
The Innovation System – where Science and Society meet

- Diverse innovation & learning pathways lead to development outcomes
  1. Science-validation-adaptation-scaling
  2. Transfer-validation-adaptation-scaling
  3. Recuperation-validation-adaptation-scaling
Recommended areas for action (1)

- EU external action, scientific and development cooperation need to prioritize research and innovation as an essential element of country and regional development strategies
- The EU should further extend and strengthen the EU-DC global research community, boosting the participation of low and (lower) middle income countries in particular
- The EU should invest in documenting and sharing RI4D experiences and lessons learned, engaging all stakeholders involved. This will contribute to strengthening and greater visibility of, EU R&I efforts.
Recommended areas for action (2)

- The EU needs to develop a more strategic, differentiated approach in line with country needs to strengthen R&I development impact in developing countries.

- Such a strategic country-specific EU approach to Research and Innovation for Development (RI4D) needs to actively pursue synergies between different EU DG’s and R&I instruments, including an active engagement by the EU Delegations in the countries where R&I partners are involved.

- An in-country assessment and thorough understanding of the strength and functioning of the National Research and Innovation System should inform a differentiated, country-specific EU RI4D approach.
THANK YOU

Dr. Ir. Paul G.H. Engel  
ECDPM  
paulghengel@gmail.com

Prof.dr. Giorgia Giovannetti  
University of Firenze  
Giorgia.Giovannetti@EUI.eu