STRATEGIES FOR REBUILDING RESEARCH CAPACITIES IN VENEZUELA

POLICY BRIEF

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Amid Venezuela's profound economic and political crisis, research and technological development may not stand out as a priority, but they should. Short-term humanitarian responses and long-term development strategies alike will depend on the country's ability to produce new knowledge and innovation. Venezuela's economic and political collapse, unfortunately, has had a devastating effect on the country's knowledge producers and users. This briefing summarizes the state of research capacity in two key sectors—health and human security, and engineering and technology—and their links to other fields of knowledge. It identifies concrete collaboration strategies, both national and international, to restore research and technological innovation in the country and ensure that these capacities serve entrepreneurs, health professionals, policy makers, civil society leaders, and others at the front-line of the Venezuelan crisis.

Background

Venezuela is currently experiencing the most severe humanitarian crisis in the Americas of this century. This structural crisis is largely, though not exclusively, of political origin, but the devastating effects are now manifesting in every sector: economic, educational, social and health.

About this Briefing

This briefing summarizes the findings from a report entitled *Capacidades de Ciencia, Tecnologia e Innovacion para Superar la Crisis en Venezuela,* which was prepared by the Global Development Network (GDN) based on desk-based research, interviews, and a series of virtual workshops conducted in July and August 2020.[1] This briefing and the report it draws upon are part of a series of papers written for the *Comunidad Venezuela* initiative coordinated by the *Centro de los Objetivos del Desarrollo Sostenible para América Latina (CODS) of the Universidad de Los Andes, Bogotá* and the International Development Research Centre (IDRC).

Given the complexity of the crisis, it requires a multi-faceted and long-term response. As part of the country's long road to recovery, the science, research and technology ecosystem will play a key role in rebuilding education, productive activity and public services. Venezuela needs to restore its capacity to generate and govern technological innovation in order to join the rest of the world in the Fourth

1 Mercado, Alexis, Ignacio Avalos, Isabelle Sánchez-Rose, María Antonia Cervilla, María Sonsiré López, Hebe Vessuri (2020) *Capacidades de Ciencia, Tecnologia e Innovacion para Superar la Crisis en Venezuela,* Global Development Network (GDN): New Delhi.

Industrial Revolution. Reliable public data will be needed to support decision-making. In health, the next generation of medical professionals and researchers needs to be trained. In the social sciences, independent and national research agendas must be reestablished.

The international community has so far prioritized research in the sectors with the most urgent needs: health, food security and engineering. This briefing and the report it is based upon look at how capacities for research and technological development have declined in these sectors, and provide recommendations on how these capacities may be restored through national strategies and international cooperation. In the medical sciences – an area in which Venezuela has traditionally been a leader in the region – about 20 percent of researchers have fled the country, affecting all fields but especially clinics, while it is estimated that the country has lost half of its researchers in food security. In both cases, research infrastructure has severely deteriorated.

Some 200,000 engineers have left the country in the past 20 years, a brain drain that threatens the technical foundation of industry and services. Meanwhile, human resources dedicated to engineering and technology research have fallen by about 50 percent.

The remaining knowledge fields present a similar landscape: loss of human resources, deterioration of physical infrastructure and rising school drop-out rates. In the social sciences, the story is different, but equally concerning. According to official figures the number of social scientists in the country has remained stable, but the politicization of research agenda setting has translated into reduced autonomy and independence of social scientists.

Indeed, the breakdown of the institutional framework governing knowledge production, as a result of sectarianism, politicization and corruption, is an obstacle to recovery throughout the science, research and technology ecosystem. As the state has abandoned its stewardship of the knowledge sector, public policies have generally become misguided. Reduced knowledge capacities and misguided policies are both a result of and have contributed to the humanitarian crisis, and have reduced the country's ability to keep up with ongoing technoscientific developments.

Findings

To inform this briefing, interviews were conducted with representatives of academia and industry, and information was collected through questionnaires. This effort has revealed a diverse array of strategies employed by researchers and knowledge brokers focused on resistance and survival. Clinics operate on impossible budgets, some researchers maintaining their activity despite frequent vandalism to their laboratories and equipment and government harassment. Other scientists have created non-governmental organizations (NGOs) to protect their independence from the incursion of the state into public universities. The research also elucidated new forms of research sponsorship and organization that point to possible futures for the science, research and technology ecosystem.

Universities, limited by budgets that have dwindled in real value to mere dollars and facing political pressure, mostly struggle to fight inertia. Given the paralysis of most experimental activity, work is undertaken using previously generated data. A more proactive strategy used by some groups in autonomous universities, and by two private universities, has been to develop mechanisms for receiving funds from international cooperation, often in connection with NGOs and private foundations; most of these efforts relate to topics connected with the humanitarian crisis.

The private sector and its support for knowledge creation and innovation has experienced serious setbacks. Despite the loss of technological capabilities, however, survival efforts continue. Private-sector associations have collaborated with civil society groups to confront the humanitarian crisis and keep the country oriented toward achieving the Sustainable Development Goals (SDGs). An example of this is the commitment of CONINDUSTRIA, Venezuela's leading industrial trade organization, to eradicate extreme poverty, combat inequality and injustice, and mitigate the impact of climate change.[2]

A third element is the role of international humanitarian assistance. Until recently, Venezuela was not targeted by international agencies. In the five most recent years with data (2014-2018), Venezuela received just US$267 million in official aid, compared with nearly US$11 billion in assistance received by Syria in the same period.[3] That might be changing. The deepening of the crisis has placed the country on the international agenda, with active participation in topics such as migration, refugees, health and food security.

Anticipating the political future of Venezuela is a favorite topic of analysts and scholars, but the efforts required to rebuild the foundations of the country's knowledge ecosystem cannot wait for a political transition, nor do they need to. There is some suggestion that the government is open to agreements with the private sector aimed at alleviating the economic crisis, but even the absence of such agreements is no excuse for inaction. Efforts to recover the science, research and technology ecosystem can build on the strategies for resilience that have emerged in the country in the recent years.

The inquiries underpinning this briefing also point to priority steps that can be taken now. Entrepreneurial and academic actors agree on the importance of international support for the recovery of research, technical and productive capacities, but they also perceive themselves as key actors in this effort. The concluding section summarizes the steps that can empower these groups to build new institutional arrangements that will provide an enduring foundation of knowledge for the long road ahead.

Conclusions and Recommendations

Despite the seeming lack of improvement in the country's political conditions in the short term, social actors are looking for new ways of acting that will allow them to survive and recover. The fact that academics, businesspeople and other organizations of civil society are perceived as interlocutors in the search for joint solutions creates important collaborative spaces. For example, there are cooperation agreements for capacity-building, productivity improvements and innovation,[4] approximations between health researchers with firms for joint development[5] and efforts to rethink engineering in higher education by giving it a sense of relevance. Technicians experienced in public management are developing programs to train managers to recover the state technostructure. These efforts, together with others, constitute an important baseline for rebuilding the Venezuelan science, technology and innovation ecosystem. A strategy should be designed, supported by international financial and technical assistance, and once its priority aims are established, concrete

2 CONINDUSTRIA (2017) Hacia una Venezuela Industrializada, La Ruta.
3 According to data from the OECD DAC database, accessed 27 October 2020.
4 Banca y Negocios (2020) 'IESA, Conindustria y Fundei firman convenio de cooperación para el fortalecimiento empresarial', 24 August 2020. Available at: https://www.bancaynegocios.com/iesa-conindustria-y-fundei-firman-convenio-de-cooperacion-para-el-fortalecimiento-empresarial/. Accessed 27 October 2020.
5 Interview with a key actor in the academy, 31 July 2020.

agendas should be established for its advancement.

Immediate actions to advance this process include:

- **Investing in existing pockets of resilience:** Identify institutions or groups with significant capacities in priority issues — with links to (public and private) universities, NGOs and business chambers — in order to strengthen their ability to drive evidence-based discussions with financial and technical support from international cooperation.
- **Connecting these pockets to one another and to existing demand for knowledge:** Support the consolidation of working networks among the research groups of universities and national and international NGOs in health and food security, with efforts directly aimed at informing actions to overcome the humanitarian crisis.
- **Supporting new institutional arrangements between private-sector groups and researchers:** Recovering production and rebuilding services requires restoration of firms' technological capability. At the same time, higher education institutions must recover research and development and teaching capacities. To foster this parallel recovery, support should be given to collaborative project agendas that address the needs of industry and services and that actively incorporate universities and research centers.
- **Strengthening relations with the diaspora of researchers and other professionals:** Support new and existing cooperation networks among researchers and other Venezuelan professionals abroad to sustain research capacities in Venezuela. This could take the form of new institutional agreements between NGOs, foundations and Venezuelan researchers, or fellowship-style programs that house Venezuelan researchers in universities abroad.
- **Establishing support guidelines for international cooperation:** Donors operating in Venezuela should follow guidelines that ensure that their support is ethical and driven by local demand for knowledge. Research support in Venezuela should not focus on narrow, donor-driven agendas, which frequently parachute consultants in for extractive data collection. In-country donor coordination can instead provide opportunities for building multi-stakeholder and interdisciplinary agendas, and support for knowledge production should also involve strategies for rebuilding science, technology and research capacities.

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