A New Vision of Sustainable Communities: Transforming Communities and Academia via the EPIC Model

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Executive Summary: Science and education represent the world's best opportunity to tackle global environmental challenges and to make progress toward the Sustainable Development Goals (SDGs), specifically SDG 11 (sustainable cities and communities) and SDG 17 (partnerships for the goals). We address the challenges academic institutions face for effective community engagement through education and extension initiatives and present the Educational Partnerships for Innovation in Communities Network (EPIC-N) framework as a best practice. EPIC-N represents a new paradigm on experiential learning, service learning, and partnership learning that occurs off campus with community organizations and local governments. EPIC-N operates in the US, Africa, and Asia and has started to grow larger in Latin America and the Caribbean since 2022. We argue that the co-production of knowledge methods used by EPIC-N partnerships has potential to target awareness, understanding and action to develop and implement improved strategies at the city and community level to advance SDGs in Latin America. As a disclaimer, we would like to note that all authors of this manuscript are currently, or have previously, been employed by EPIC-N.

I. Introduction

Latin America and the Caribbean are among the richest regions on the planet in terms of culture, biodiversity, and history amidst their challenges (UN 2019). Countries in this region continue to play a leading role in developing and adopting the 2030 Agenda for Sustainable Development which has been the focus of dialogues, assessments, and polemics (UNGA 2015). The

Sustainable Development Goals¹ (SDGs), defined by the UN 2030 Agenda for Sustainable Development, embrace all aspects of human life and development – from health, education, and the environment to peace, justice, security, and equality (UNSDG 2018). The SDGs address some of the region's most pressing needs including access to education and technological

¹The 2030 Agenda for Sustainable Development was adopted by all 193 Member States of the United Nations at the Sustainable Development Summit in New York in September 2015. <u>https://sdgs.un.org/goals</u>

development, innovations. economic and adapting and mitigating climate change impacts. At the same time, according to the Economic Commission for Latin America and the Caribbean (ECLAC 2022), progress differs between goals, with many SDGs more prone to lag behind with implementation (e.g., end poverty, reduction of inequalities, sustainable cities and communities, climate action, and peace, justice, and strong institutions). A reason this is the history of unsuccessful for development linked to gaps in socioeconomic status, political instability, corruption, and increased exploitation of natural resources (UNSDG 2018). Lately, the COVID-19 pandemic has exacerbated gaps in access to education, health, sanitary water and the uncontrolled use of natural resources. When reckoning with the current global change impacts, it leaves the region in a very strained condition, with many of its countries on the verge of socio-economic and disasters environmental (ECLAC 2022; Mazanedo and Manning 2020). According to the United Nations 2020 blueprint (UN 2020), science and education represent the world's best opportunity to tackle socio-environmental difficulties and make progress toward the SDGs.

The blueprint lists crucial research priorities and key scientific strategies to support sustainability and advance the implementation of the SDGs. For example, five strategies for strengthening research ecosystems were identified. including scaling up data infrastructure, implementation science, rapid learning systems, knowledge mobilization, and science in technology and education. Higher education institutions should see this as a clear opportunity to embark on innovative initiatives that apply some of these strategies and revalue their commitment to advancing the SDGs, specifically SDGs 11 (sustainable cities and communities) and 17 (partnerships for the goals). This study will address the challenges academic institutions face when tackling global environmental change issues through education and extension initiatives and present the Educational Partnerships for Innovation in Communities Network (EPIC-N) framework as a best practice for community engagement. We argue that the co-production of knowledge methods used by EPIC-N's (EPIC thereafter) university-community partnerships has potential to target awareness, understanding and action to develop and implement improved

strategies at the city and community level to advance SDGs in Latin America. This is a two-way process of building trust, listening to communities, and understanding their meaning of "quality improvement" to co-designing the collaboration.

II. Role of universities and communities in the Americas in the global context

i. Academic reforms as sustainable global change opportunities

Although this study does not analyze higher education extension programs and universities' social responsibility per se, it is an essential aspect in understanding how universities are defining their social responsibility roles not only as a need to strengthen civic commitment and provide social services to their local community but as a strategy for local and global sustainable development (Fletcher and Pushnik 2017).

Universities in Latin America have partly built their social responsibility into their extension and outreach programs. Today, public and universities combine universitv private businesses and university social responsibility models. At the same time, these models are being adapted and transformed as a constant response to regional higher education reforms and new movements to adapt local to global change contexts (Menoni Cano 2022). By this we mean, an approach that expands beyond service and outreach to actual engagement. For example, public and private universities in Latin America are experiencing accreditation recognition and reforms of their legal frameworks (Gerón-Piñón et al. 2021). These reforms have conferred more significant accountability to education institutions in their curricula for experiential learning and hence require a greater promise from them to engage more forcefully with society and their needs. As a response, many universities are launching a set of innovative academic and experiential approaches in which university extension represents a fundamental support unit for problem-solving and addressing community demands and needs. thus strengthening community engagement. In regard SDGs academia. universities to in are increasingly becoming actors in multi-stakeholder partnerships for the SDGs (ECLAC 2022a). University researchers and students are participating hands-on in projects with their expertise and time. They can

contribute to knowledge transfer and build the tools that the SDGs require. These new approaches are building the ground for how academic institutions might tackle global environmental change challenges while incorporating first-hand local knowledge and compromise. Still, some challenges universities are the limited understanding face of engagement with communities and how to insert experiential learning outcomes in the course syllabi and delivery. While universities are navigating and implementing ways to impact work with cities and communities, the model implemented by EPIC is well situated to contribute to this endeavor as best practice and scale-up impact.

ii. The Educational Partnerships for Innovation in Communities Network: Building transdisciplinary initiatives for transformative outcomes

EPIC is an international network of some community-based universityor seventy programs using the "EPIC Model"², a framework for university-community collaborations, to advance progress on the UN SDGs (see Figure 1 in appendix). The community-driven EPIC Model matches declared community needs for documentation, design, or research to courses of study at universities, research, or extension programs, with expert instructors giving students course credit for working to meet those needs. More than 1,800 specific projects in more than 350 politically and demographically diverse communities-advancing several SDGs (see Figure 2 in appendix)—have been completed so far. EPIC has thus addressed universities' critical thinking about ensuring that university-community collaborations benefit community and university stakeholders (Schlossberg et al. 2018).

The EPIC Model focuses on university support of communities in dealing with socioeconomic and environmental challenges by creating academic-community partnerships. These partnerships allow communities lacking the bandwidth or capacity to meet those challenges form a science-community interface at very little cost. At the same time, universities, faculty, and students learn from their applied interaction and multi-disciplinary approaches to addressing complex societal needs. The partnership promotes a trusting, collaborative relationship where problem specifications, objectives, and setting of common expectations are all conceptualized in consensus. The collective support constructed by the EPIC Model enables community stakeholders to put innovative perspectives and knowledge into best practices and these university-community partnerships strengthen not just service or educational experiences but scaled actions toward socio-transformative outcomes (Schlossberg 2019).

Some older EPIC model partnerships were used in Latin America, first occurring in 2015 with San Diego State University's Sage Project in partnership with the City of Tijuana and 2017 with the Universidade Federal de Minas Gerais, Brazil's COMpasso (Resilient Communities) Program.

The Universidade Federal de Minas Gerais, Brazil started its COMpasso (Resilient Communities) Program in 2017 in partnership with the city of Belo Horizonte, Brazil. COMpasso's main objectives were to advance adaptation solutions for vulnerable regions impacted by flooding, landslides, and rising temperatures (COMpasso). The EPIC partnership has since built institutional capacity via a community engagement initiative with residents of informal settlements (Barlow et al. 2022). Participatory activities included climate action plans and urban agroforestry advancement. Examples of attained transformation processes include establishing green corridors and enhancing public schools' energy efficiency, which contributes to greater local, sustainable energy demands and needs (de Marco 2021).

San Diego State University introduced the <u>Sage</u> <u>Project</u> in 2013, which worked with Mexican border communities and the city of Tijuana in Mexico to reshape communal recreation sites for underprivileged locations in Tijuana (Barlow 2018). The EPIC partnership focused on empowering communities and strengthening capacity-building through technical workshops (Anon 2015). In addition, the partnership introduced sustainable design solutions and contributed to a transformed and improved urban recreational use, fortifying community organization and urban citizenship through agreed action (Hicks et al. 2016).

² We are going to refer to EPIC-N as the network of all registered programs and projects implementing the EPIC-model. :

works in partnership with several EPIC international organizations that form regional EPIC Steering Committees which share joint objectives to advance community capacities and tools against global environmental changes. For example, the Inter-American Institute for Global Change Research, the global network of Local Governments for Sustainability, and the United Nations Global Adaptation Network came together as a regional Steering Committee to launch EPIC's 2022 expansion into Latin America. To do this, EPIC started a scoping process of future program partners in Latin America and the Caribbean, including initial contacts, workshops, and data collection via questionnaires in coordination with the Steering Committee. As a result of the new expansion phase, EPIC produced a strategy document with recommendations for implementing the EPIC Model within the region's specific social and cultural contexts (Bray et al. 2022). Here, we report on results stemming from the strategy document that will shed light into academic and community collaboration.

iii. Rethinking collaboration strategies between academia and communities in Latin America: Examples of emerging opportunities and challenges

As academic reforms are taking place in Latin American universities, they are rethinking how to develop, strengthen and visualize their collaborative strategies with society. Ongoing challenges prevail and opportunities exist. For example, Higher Education in Ecuador has demanded since 2010 the implementation of extension programs with society and social aid programs

(https://www.ces.gob.ec/documentos/Normativ <u>a/LOES.pdf</u>). A major challenge they faced at the beginning was resistance from professors to commit, among other academic responsibilities, projects and activities emphasizing to community service. However, with time, the mandatory status for implementation of collaborative strategies and the more formal institutionalization (meaning an established program with some funding and inclusion in curricula) increased the participation of more professors and students. This was the case for the Escuela Superior Politecnica del Litoral (ESPOL), a recent EPIC Model program adoptee, where the implementation has thrived since 2014, implementing 277 projects, including 628 teachers as collaborators and 5,594 students as

participants. Until 2020 ESPOL registered 59,000 beneficiaries (Personal communication from former Dean of Extension ESPOL Maria Denise Rodriguez, May 25th, 2022), Although ESPOL has been implementing a similar EPIC Model, it did not hesitate to join EPIC. By joining EPIC, ESPOL gains international visibility and recognition for their achievements. The opportunity for international collaboration encourages ESPOL to engage more professors in their program, who see collaboration in a broader network as a value addition. ESPOL made it clear that joining EPIC represents the validation at the international level of their long-term multidisciplinary initiatives and collaboration efforts and gives them the opportunity to share knowledge and learn from other programs in the network (Bray et al. 2022). At the community level, it represents a broader visualization of their priorities and needs and provides connections to EPIC partner organizations like ICLEI and UNEP-GAN. ESPOL defines EPIC partnership as a sense of recognition of ESPOL's socially responsible continuous interaction with communities based on knowledge generation. At the same time, EPIC allows scaling-up the interconnectedness of teaching, research, and engagement. ESPOL is now part of the EPIC Latin America and the Caribbean External Advisory Committee which have monthly meetings to discuss how to scale up individual model initiatives under the EPIC umbrella, make the model more sustainable, integrate a monitoring and evaluation structure, and share experiences and collaborate via future regional professor and student exchanges. EPIC functions here as the coordinating institution, facilitating the much appreciated dialogue. First steps of mutual collaboration are joint sessions presentations committed and at several international conferences (https://www.epicn.org/events/ and https://sricongress.org). Future plans are to experiences and exchange internship opportunities and possibly co-teach similar courses with other regions/countries based on similar thematic niches and SDGs, ultimately generating more impact across regions.

Another example of rethinking collaboration strategies between academia and communities is Brazil. Brazilian universities have devoted efforts to creating new extension policies in the past decade. However, they faced little financial support and appreciation of extension in university pedagogy (Bray et al. 2022). Brazil's recent National Plan of Education (2014-2024) represents a first step toward innovation for university extension missions. For example, the law requires a ten percent undergraduate curricular hour insertion for projects or extension programs in areas of social relevance (Gomez et al. 2019). The reform represents a challenge for Brazilian Universities, which have rarely linked curricular activities with extension programs engaging communities due to limited resources and the overestimation of research (Bray el al. 2022). According to communication with the Universidade Federal do Acre (UFAC), partnering with and using the EPIC Model is suitable because it guides professors on how to comply with new curricula guideline reforms to address the extension component to structuring community engagement as a best practice (Prof. Sabina Cerruto Ribeiro, Universidade Federal do Acre, Brazil, personal communication, June 23rd, 2022/Bay et al. 2022). UFAC and Federal University of Rondônia (UNIR) are universities located inland and far away from more resourceful universities located within bigger Brazilian cities like Sao Paulo. Here, commitment from university authorities to engage in collaborative relationships with local governments and communities might be slower. Furthermore, the concept of building partnerships might be non-existent or attributed to some single professors (Bray et al. 2022). Joining EPIC could be considered a first step toward a more institutionalized process. At the same time, reaching out and working with communities is a challenge when there are few collaborative relationships with local communities, as mentioned in the UNIR case in Brazil. UFAC and UNIR faced challenges related to training professors to work in a participatory way with communities, establishing a process of trust, demonstrating good leadership using communication techniques proper with communities, and listening to their needs and priorities (Bray et al. 2022). Universities must be willing to devote themselves to genuine reciprocal relationships with local communities to build familiarity with ground issues. This demands time and is a learning process. This process is even more complex when local communities governments and lack right direction as their universities navigate through 'how' to implement academic-community partnerships. Furthermore, due to a lack of SDG-related knowledge, UFAC and UNIR lack initiatives to advance the SDGs. For EPIC, this is a challenge but, at the same time, an opportunity to work with engaged professors that have some ongoing collaborative relationships with local communities and are eager to co-design and co-create solutions. EPIC can help make these two-way initiatives more common, visible, and accessible. In addition, EPIC's expertise within the network can help new emerging professors access SDG tools and guidance through training, certification, seed funding, and specialized tools. The following is an example of a prospective EPIC Model program with the potential to empower communities and open opportunities for adaptive transformation. In Mexico, the University Veracruzana (UV) established the 2030 Master Plan for Sustainability. It outlines the need to include a classroom knowledge approach that relates sustainability issues and SDGs with their social environments using transdisciplinary approaches, participatory action research, and social impact methods. Furthermore, students develop and evaluate public policies and spaces for intersectoral socio-environmental interest. At the same time, UVs outreach supports indigenous, rural, and suburban communities in their endogenous biocultural development processes by recognizing and fortifying their knowledge and capacities local (https://www.epicn.org/stories/universidad-ve racruzana/). UV identified similar missions and vision framings with the EPIC Model. It decided to join the EPIC network in 2023 as EPIC represents a mechanism to amplify their mission, vision and voice at a regional and international level. The network is attractive due to its international reach, opportunities to share information across EPIC's website and partners, conferences and monthly network meetings. University partners value belonging to a Community of Practice for academic-community

EPIC has the flexibility to work with already established programs or single engaged professors. It adapts to each university's local and regional circumstances, timeframe, possibilities, and needs. Ultimately, it is up to each university to visualize a value added by

collaboration (Bray et al. 2022).

organization, hindering successful collaboration.

According to UNIR and UFAC, engaging with

EPIC and implementing the EPIC Model, starting

with engaged professors, is a first step in the

joining the network or not. More importantly, is the recognition of EPIC as best practice to improve community engagement. In some cases, it is the right timing, a group of professors who value collaboration across borders, a similar mission and vision of university authorities or lack thereof, that makes EPIC attractive. At the community level, this is a two-way process of building trust, listening to communities, and understanding their meaning of "quality improvement" to co-designing the collaboration.

III. EPIC model limitations and recommendations

The main challenges to implementing the EPIC Model are financial, time, predisposition, and institutionalization from the academic side. Financial, because implementing the Model requires minimal funds that need to come from an institutional budget. If a university has institutionalized a mandatory procedure to include academic-community partnerships within students' curricula and professors' academic workload, resources, even if limited, might be available. However, the first step to institutionalizing it is creating a vision of community engagement beyond the typical outreach approach and moving to a more reciprocal and respectful synergistic relationship with takeaways for students and communities. An exemplary EPIC Model implementation requires human resources, facilitation. responsibility, and commitment. Although the costs are low since the Model should use existing academic resources, these are not always sufficient. Expenses range from transportation to necessary materials and field equipment for students. A professor willing to buy into the idea of working with communities and engaging its students already has limited time available due to academic workload. In addition, engaging with communities and organizing a participatory course structure demands time. project coordination, and money. One solution to address financial and time-related issues is to have an academic EPIC coordinator from existing resources paid for by the university. The EPIC Model can start on a low budget but still engage motivated teachers in a self-implemented pilot phase and involve other academic authorities to facilitate scaling up the process.

EPIC and its partners have offered many opportunities³ for seed funding emerging projects in Asia, Africa, and Latin America. According to data collected from the Latin America scoping exercise, professors and students need continuous training and skills in participatory and transdisciplinary approaches. Community engagement is a learning process that requires understanding of the complex local social, cultural, political, and environmental realities (Bray et al. 2022). As the EPIC Model expands in Latin America, EPIC sees this as an opportunity for further collaboration and funding with partner universities to address these gaps.

In addition, EPIC needs to be aware that targeted environmentally-focused SDGs still struggle to achieve significant progress. Previous EPIC Model initiatives have advanced SDGs in other regions (see Figure 2 in appendix). Some universities have a good understanding of SDGs, while other universities have gaps to fill. For the most part, universities do not know how to operationalize the advancement of SDGs within society. Communities and local governments may not be familiar with SDGs objectives either. Since SDGs are a significant part of EPIC's implementation strategy, a recommendation is to offer training on SDGs in the design phase of proposals with universities, communities, and organizations.

Understanding the benefits and limitations of the EPIC Model is of utmost importance. Essential protocol guidance and openness about what research products students can deliver and share with communities is necessary in keeping community expectations clear and honest. At the core is a respectful and reciprocal experience with takeaways for both students and communities.

EPIC has several plans in coordination with the EPIC LAC Steering Committee. These are geared toward achieving the distinctive programs' sustainability, quality assurance, monitoring, and evaluation structures. Some specific plans include the following: 1) to promote student and community exchanges across programs and regions; 2) to strengthen collaboration with other local efforts at the community and municipal levels; 3) to disseminate knowledge

³ In February of 2023, EPIC-N announced the granting of ten small seed funds for universities in Latin America.

and lessons learned via different channels of communication; 4) support and advise other universities that are eager to implement the EPIC Model; 5) to connect with other Higher Education Networks that share similar values and mission; and, 6) to promote training in research methods, communication, and ethical research for community engagement.

III. Conclusion

The EPIC Model exemplifies co-production methods and a community-university best practice. For Latin American universities that already implement a similar Model, joining EPIC is the validation at the global scale of their best practice and recognition of their efforts on experiential learning, service learning, and learning that occurs off campus in partnership with community organizations and local governments. It is a mechanism for other universities to speed up their community engagement practices and connect with similar programs in other regions. The value added in collaborating within a network opens new opportunities for interaction. training. solution-finding, decision-making, collaboration, monitoring, and evaluation of impact strategies and funding. We have shown that universities can improve community engagement beyond the typical outreach approach and build a long-term strategic vision to engage with communities. In the context of the Sustainable Development Goals, the co-production of knowledge methods through their learning modalities and community focus has the potential to target awareness, understanding, and action to develop and implement improved strategies at the city and community level to embrace global environmental challenges.

Appendix



Figure 1: The EPIC-Model is defined by the university and city/community partnership that implements transdisciplinary experiential student learning initiatives led by faculty enthusiasts. The EPIC partnership model builds on the city/community's needs and opportunities to bring innovative solutions that leave an impact and improve the quality of life among the community members. The partnership must adhere to one or more UN SDGs (United Nations Sustainable Development Goals). The win-win partnership contributes to the joint co-production of knowledge, advancing UN SDGs, and improving governance. Its five key pillars for successful co-production include the following: 1) respect existing administrative structures or individual responsibilities and incentives on all sides; 2) create a genuine partnership with local governments or community organizations; 3) aim to improve quality of life; 4) focus on community-identified, -driven, and -evaluated contribution to the community; 5) catalyze multi-disciplines and large numbers.



Figure 2: EPIC Model programs advance the UN Sustainable Development Goals by partnering with local governments and/or community organizations. Figure 2 displays the number of EPIC Model projects that have advanced each individual SDG.

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Andrea Chavez Michaelsen received her Ph.D. in Geography. Since 2009, Andrea has been working on capacity-building initiatives via applied research, training, and extension activities in the Peruvian Amazon on climate change variability and vulnerability, environmental public policies, biodiversity conservation, indigenous communities, and remote sensing. She is affiliated with the Center for Latin American Studies and the Tropical Conservation and Development Program at the University of Florida. She is engaged in a university-community collaboration that has significant potential to advance education, innovative sustainable development approaches across Latin American universities, and stakeholder partnerships. Andrea is also the Coordinator for EPIC-LAC.

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