



CHAPTER 3

VOLUNTARY LOCAL REPORT (VLR), ROADMAP CASE TIJUANA CITY, MEXICO 2024¹

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ABSTRACT: The development of the first Voluntary Local Report (VLR) of the city of Tijuana, Baja California, Mexico involved a glocal analysis of local activities, in accordance with the Global Agenda 2030 of the Sustainable Development Goals (SDG), the approach of the QHS Methodology that uses the systemic approach was applied; convening different sectors of society; Local Government, Academia, Companies, Associations and Consultants. The NODESS Tijuana program generated a role of awareness and involvement of sectors of society by specialized topics, strategically generating Social Service activities at different educational levels, training of Instructors with Professors and Undergraduate and Graduate Students. Likewise, the development of research projects in each SDG to identify initiatives from academia, with links to the public and private sectors. The first VLR of Tijuana 2024 was developed through the leadership of the Tijuana Institute of Technology and the RIESS TecNM Research Network, in coordination with the Municipal Institute for Citizen Participation of the Tijuana City Council. Currently, the First VLR of Tijuana 2024 is in the UN Databases, being the first city in Northern Mexico to develop and present its VLR to society and the world.

KEYWORDS: SGDs, VLRs, Degrowth, Green Growth, Sustainable Innovation

1. INTRODUCTION

The development of the Chapter on the analysis of the Sustainable Development Goals (SDGs) of the 2030 Agenda, with the purpose of developing a Voluntary Local Report (VLRs) in a city, starts from the approach of the Academy, in this case, the National Technological Institute of Mexico, which has developed from its New Educational Model, which integrates four dimensions; Philosophical, Academic, Organizational and Linkage. It integrates three principles: the Educational Model "Humanism for Social Justice"; Social Relevance, Equity and Excellence, and

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Continuous Improvement. With six transversal axes: Interculturality, Inclusion and Equity, interdisciplinarity, Social Responsibility, Innovation and Vanguard, and Environmental Awareness [1, 2].

This chapter of research perspective involves several topics of challenges for the integration of the different sectors of society, towards developing a Voluntary Local Report, which is why the topics and their conceptual description are addressed in the first stage of the chapter. Through systemic development and policy analysis for sustainable innovation, in turn, the revision of administrative and social economy initiatives for technological humanism, which focuses on the integration of ethical and humanistic principles, social economy seeks to promote social well-being and sustainable development [3, 4].

Key concepts of the Perspective Chapter

The conceptual approach aims to describe all the elements that intervened in the experience of the development of the first VLR of the City of Tijuana, theoretical and methodological empowerment. Voluntary Local Reports (VLR), according to UNESCO, bring benefits and raise awareness in society. This approach highlights the need for States and Cities to be able to inform their populations about the importance of the benefits of acting on the Sustainable Development Goals for the overall progress of society and quality of life to achieve economic growth, social development, and environmental awareness [5, 6]. Table 1 presents the systemic approach to the key concepts considered in this Perspective Chapter, in the specific case of the Development of the VLR Tijuana 2024.

Key concepts for VLRs Case: Tijuana		Systems Approach (QHS Methodology)
1	17 SDGs of the 2030 Agenda	International Governance Agreements
2	Voluntary National Reports (VNRs)	National Government Initiatives
3	Voluntary Local Reports (VLRs)	Local Government and Academia Initiatives
4	VLRs Methodology	Academia Initiatives
5	NODESS for the Promotion of the 2030 Agenda	Government, Academia, and Society Initiatives
6	RIESS Research Network	Academy and Research Initiatives
7	National Technological Institute of Mexico (TecNM)	Higher Education Institutions
8	Academic Body for Applied Research – ITTIJ-CA-12	Initiatives of Specialized Researchers by Subject
9	QHS Methodology for Systemic Development and Integration (Evolution of the Triple Helix)	Academy, Local Government, Enterprises, Associations, Consultants and Society Initiatives
10	Tijuana Voluntary Local Report (Tijuana’s first VLRs)	Local Government and Academia Initiative (TecNM)

Table 1. Analysis of factors for systemic development in society

17 SDGs of the 2030 Agenda

The 17 Sustainable Development Goals (SDGs) on this agenda aim to alleviate poverty, safeguard the environment, and guarantee prosperity for everyone. In 2023, a summit on the SDGs was held to assess progress and accelerate the actions needed to meet these goals. The summit brought together world leaders, governments, and representatives from various sectors to renew efforts and promote transformative actions [7]. These 17 SDGs include specific objectives,

Table 2 shows their description and impact of great relevance; the elimination of poverty, and equal rights for men and women, good employment, affordable, clean electricity, clean water and toilets, and economic expansion [8].

SGD	Goal	Description
1	No poverty	Companies have found business opportunities in adopting measures to help reduce poverty
2	Zero Hunger	Getting rid of hunger, making sure there is enough food for everyone, improving diet, and supporting healthy farming
3	Good health and well-being	Making sure everyone stays healthy and happy at all ages
4	Quality Education	Make sure everyone has access to a fair, high-quality education, and encourage people to keep learning throughout their lives.
5	Gender equality	Realizing gender equality and empowering all women and girls is a goal that we have
6	Clean water and sanitation	Getting everyone access to water and cleanliness and making sure they are managed in a way that lasts
7	Affordable and clean energy	Making sure everyone has access to current, safe, cheap, and long-lasting energy
8	Work that is decent and economic expansion	We should encourage economic development that is long-term, equitable, and inclusive; employment that is full and meaningful
9	Industry, innovation, and infrastructure	Developing infrastructure that is robust, while also encouraging industry that is inclusive and sustainable, and fostering innovation
10	Reduced inequalities	Reducing inequality within and between countries
11	Localities and communities that are sustainable	An environment that is sustainable, resilient, secure, and inclusive approach to the development of cities and human settlements
12	Responsible production and consumption	ensuring patterns of consumption and production that are economically sustainable
13	Climate Action	Take immediate action to counteract the impacts of climate change and fight against it.
14	Life below water	Conserve An inclusive, secure, resilient, and sustainable approach to the development of cities and human settlements sustainably

15	Life on land	Ensure that terrestrial ecosystems are used in a sustainable manner, fight against desertification, put a stop to and reverse the process of land degradation, and put an end to the loss of biodiversity.
16	Peace, Justice, and Strong Institutions	Promote peaceful, inclusive societies for sustainable development, provide access to justice, and construct effective, responsible, and inclusive institutions at all levels.
17	Partnerships to achieve the goals	Implementation mechanisms and the Global Partnership for Sustainable Development's revitalization
Reference: Own elaboration (2024) with information from the United Nations		

Table 2. 17 SDGs of 2030 Agenda

The relevant aspects of the content of the Voluntary National Report (VNR), as a reference framework for the development of the Voluntary Local Report (VLR) of the City of Tijuana, below are detailed the different VNRs developed in Mexico, including government initiatives and public dissemination policies [9].

Voluntary National Reports (VNR)

The Voluntary National Report (VNR) and the Voluntary Local Report (VLR) are key tools in the framework of the implementation and monitoring of the Sustainable Development Goals (SDGs) of the 2030 Agenda. Table 3 presents historical statistical data of Global Cities with their VNR and VLR, both processes aim to evaluate the progress of countries and regions in addressing the SDGs [10].

Mexico has presented the latest Voluntary National Report of the country, which shows the richness of the diversity that characterizes us as a country; as well as the multiple solutions that have been given at the Municipal, State and Federal levels to common problems in order to guarantee the end of poverty in the world, the eradication of hunger, food security, healthy living and quality education; achieve gender equality; ensure access to water and energy; promote sustained economic growth; take urgent measures against the climate crisis; promote peace and facilitate access to justice [11].

Year	Participating countries	VNRs and VLRs
2024	Finland, South Africa, Tunisia, Uruguay, Mexico, Sweden, Norway, Finland, Iceland, Denmark	22
2023	Moroccan, Argentine, and Australian soils. Japanese, Belgian, Danish, American, Finnish, Portuguese, Uruguayan, Brazilian, Mexican, and Malaysian citizens	14

2022	Tanzania, Malaysia, Netherlands, Spain, Australia, Mexico Japan, Ecuador, Bolivia, Guatemala, Brazil, Finland, China, Jordan, Argentina, Portugal, UK, Australia, Paraguay, Germany, Uruguay, Colombia	23
2021	South Africa, United States, China, Sweden, Japan, Spain, Argentina, Brazil, Germany, Malaysia, South Korea, Norway, Canada, Denmark Finland, Indonesia Mexico, Belgium, Peru, United Kingdom, Norway,	21
2020	Greek, Argentine, Brazilian, Chinese, South Korean, Mexican, Mozambique, Albanian, Spanish, German, Finnish, Belgian, Uruguayan, and American nations	14
2019	Argentina, Belgium, Bolivia, Brazil, Finland, Mexico, Japan, United States, United Kingdom, Portugal, South Korea, Germany, and Spain	14
2018	South Korea, Japan, Bolivia, the United States, and Spain	5
2017	Brazil, Germany, Belgium, Australia, and the Philippines	6

Reference: Own elaboration (2024) United Nations

Table 3. World Cities that Have Submitted an Agenda 2030 Voluntary Local Report

The 2030 Agenda’s relevance has been vigorously promoted since 2015, with various strategies and instruments being used to manage local planning at the city, regional, state, and national levels to carry out each SDG’s implementation. The records of the nations that voluntarily submit reports each year, whether at the state, regional, or even local level, are shown in Table 4 of the Social and Economic Affairs Government report published by the UN [12].

Although there are many obstacles to overcome, cooperation among all facets of society can lead to unexpected results. Because of this, SDG 4’s primary responsibility in the education sector is to act as a catalyst for change and a leader, integrating, inspiring, and articulating the various facets of society. Education level serves as a barometer of society’s capacities. These reports on the implementation of the 2030 Agenda are voluntary, open, inclusive, participatory, and transparent for all and seek to identify areas where a favorable trajectory has been achieved and those where it is necessary to redouble efforts to achieve the SDGs [13].

VNRs and VLRs have become the cornerstone of monitoring the global implementation of the 2030 Agenda for Sustainable Development Goals (SGDs), as they help to fine-tune the implementation strategy [14].

First Mexico Voluntary National Report (VNR) 2016

This report marked an important milestone, as Mexico was one of the first countries to submit an VNR a reference to the High-Level Political Forum on Sustainable Development (HLPF) of the United Nations. The 2016 report focused

on preparatory measures to create an enabling environment for the implementation of the 2030 Agenda in the country [15].

The first Mexico VNR highlighted several key aspects:

1. **Government Commitment:** The Mexican government's initial actions to align its policies and programs with the Sustainable Development Goals (SDGs) were detailed.
2. **Multisectoral participation:** The inclusion of various sectors of society, including the private sector, academia, and civil society organizations, was promoted.
3. **Identification of challenges:** The main challenges that Mexico faced in the implementation of the 2030 Agenda were identified, as well as the opportunities to overcome them.

This report laid the groundwork for subsequent reports, which have continued to assess and report on the progress that has been made and the problems that have been encountered participating in Mexico's efforts to achieve the Sustainable Development Goals.

Second Mexico Voluntary National Report (VNR) 2018

Mexico's second Voluntary National Report (VNR) was presented in 2018. This report focused on reflecting on the progress, challenges and lessons learned during the first three years of implementation of the 2030 Agenda [16].

The second Mexico VNR highlighted several key aspects:

1. **Progress on the SDGs:** Progress on several Sustainable Development Goals (SDGs) was documented, highlighting flagship actions and specific challenges.
2. **Multisectoral participation:** Contributions from various social actors and levels of government were included, underscoring the importance of collaboration to face the challenges of the 2030 Agenda.
3. **Diagnosis of opportunities and challenges:** A detailed analysis of the possibilities and difficulties that are brought about by the execution of the 2030 Agenda in Mexico was presented.
4. This report was an important step in consolidating Mexico's commitment to sustainable development and laying the groundwork for subsequent reports.

Third Mexico Voluntary National Report (VNR) 2021

Mexico's third Voluntary National Report (VNRs) was presented in 2021. The assessment of the 2030 Agenda for Sustainable Development's implementation's advancements and obstacles was the main objective of this paper [17].

The third VNRs highlighted several key aspects:

1. **Innovative methodology:** A methodology was used that allowed the active participation of various sectors of society, including national and regional governing bodies, nonprofits, schools, businesses, and more.
2. **Progress on the SDGs:** Progress on several Sustainable Development Goals (SDGs) was documented, highlighting flagship actions and specific challenges.
3. **Multisectoral participation:** The inclusion of various social actors and levels of government was promoted, underlining the importance of collaboration to face the challenges of the 2030 Agenda.

This report was an important step in consolidating Mexico's commitment to sustainable development and laying the groundwork for future reporting.

Fourth Mexico Voluntary National Report (VNR) 2024

Mexico's Fourth Voluntary National Report (VNRs) was presented in July 2024. This report reaffirms Mexico's commitment to Vision 2030: Achieving Sustainable Development and demonstrates the advancements gained since a humanistic development model was put into practice [18].

The fourth VNRs highlighted several key aspects:

1. **Poverty reduction:** More than 5 million people were lifted out of poverty between 2018 and 2022, directly impacting SDG 12.
2. **Decrease in economic inequality:** The income gap between the richest and poorest declines was reduced.
3. **Minimum wage increase:** The minimum wage increased by 110% between 2018 and 2024.
4. **Food security:** More than 10 million people now have access to sufficient and nutritious food, contributing to the advancement of SDG 2.

The fourth report also highlights the importance of multisectoral collaboration, including input from state and federal agencies, businesses, and nonprofits in the area.

Voluntary Local Report (VLR)

The amount of Mexican Voluntary Local Report (VLR) has been rising steadily since 2019. Every year, efforts have been made in different regions of the country to

raise awareness of the importance of knowing and understanding the usefulness of the SDGs in cities and states. This has motivated Local and State Governments to incorporate the 2030 Agenda into their Municipal Development Plans and Urban Development Plans [19].

It is essential that all sectors of society participate in proposing innovative and creative initiatives to safeguard the planet, nature, the environment, and all natural resources, promoting green growth and reducing degrowth, to promote a culture of sustainable development in our communities. Mexico’s Voluntary National Reports (VNRs) are key documents that assess progress and challenges in carrying out the 2030 Agenda’s Sustainable Development Goals. Reports like this are often sent to regional forums including the UN High-Level Political Forum on Sustainable Development (HLPF).

The participation of local actors in the preparation of the Voluntary Local Report (VLR) is crucial. With 32 Federative Entities (States) and 2,475 Municipalities, Mexico (official name: United Mexican States) has 131.1 million inhabitants and is expanding at a growth rate of 0.9. This gives rise to the obstacles that Mexico must go through the stages of empowerment, awareness and taking specific actions according to the particularities of each locality. Furthermore, Mexico’s Voluntary Local Reports (VLR) are included in the UN 2030 Agenda reports (Table 4) and cover 8 of the 32 state governments and 5 of the 2,475 municipal governments [20].

Year	State Government	Municipal Government
2024	State of Queretaro	Santa Maria del Oro, Veracruz, Zapopan, Tijuana
2023	Puebla, Chiapas, State of Mexico	Tizayuca, Cordoba, Kanasín, Queretaro, San Francisco del Rincon
2022	Oaxaca, Quintana Roo	Cordoba, Tekax
2021	Mexico City (Capital), Durango, Tabasco, Mexico	Guadalajara and Merida,
2020	Yucatan State	-
2019	Oaxaca and Mexico City	-

Reference: Own elaboration (2024)

Table 4. Voluntary Local Report (VLR) in Mexico

Voluntary Local Report (VLR) Methodology

The VLR is part of the follow-up mechanisms of the 2030 Agenda, this methodological proposal can be modified according to the needs of each subnational government. It is a process by which governments subnational, in collaboration with other relevant factors such as society civil society, academia and private initiative,

begin an evaluation of their progress around the implementation of the 2030 Agenda in their respective contexts [21].

As a result of the voluntary review process, which must be open, participatory, inclusive, transparent, and multi-actor, states and municipalities may prepare a document called “Voluntary Local Report”, the which details the process and results achieved within the framework of these reviews, as well as the good practices, advances and challenges that are faced not only from the activities of the government, as well as from the functions of the numerous important sectors for the sustainable development. With the decision of a state and/or municipality to develop a review and subsequent Voluntary Report on the implementation of the 2030 Agenda in its territory, it is highly desirable to consider the following elements:

1. Designate a team in charge of the ISV development process.
2. Prepare a Work Plan that indicates, among others, the milestones, responsible parties, and dates for the fulfillment of each delivery.
3. Based on the State and Municipal Development Plan, an analysis of the policies, programs and actions implemented should be carried out.

At the state or municipal level, a methodological analysis of the SDGs in the territory is developed, to define quantitative and qualitative indicators and goals that show the progress of the SDGs. These indicators and goals will be adapted to subnational realities and priorities. In addition, strengths, gaps, and challenges in the regulatory framework will be identified. At the subnational level, a policy framework can be given to implement the Sustainable Development Goals.

1. Identify key local actors involved in the implementation of programs and policies linked to the 2030 Agenda. Consultation and participation spaces can be established in which these actors can share the relevant information they have.
2. Collect relevant data and carry out an analysis of the available information to evaluate the progress in the implementation of the SDGs at the subnational level. Statistical data, sectoral reports, surveys, public consultations, and other data collection methods may be combined, with the participation of entities such as INEGI (National Institute of Statistics, Geography, and Information) and other institutions with expertise in statistics and open data. It is highly desirable that, to the extent possible, the data included in the Report be disaggregated by gender, age, and ethnicity, with special attention to vulnerable groups, considering the principle of “leaving no one behind” [22].

Content of Voluntary Local Reports (VLR)

On the implementation of the 2030 Agenda, they imply an inclusive review process, aimed at generating tangible lessons and solutions to influence the fulfillment of the SDGs. In this context, the VLR should reflect the state of progress of the state or municipality concerning the execution of the 2030 Agenda from the perspective of a broad perspective, reviewing best practices in its institutionalization, lessons learned, challenges to be overcome and next steps. It is recommended that the following sections be considered as essential elements of the content of the Voluntary Local Report:

1. Opening Statement: A message from a high-ranking authority of the government of the state or municipality expressing their enthusiasm to participate in the voluntary review and sharing the commitment of the state or municipal government to advance in the implementation of the 2030 Agenda.
2. Highlights of the VLR: context of the VLR, as well as its main findings and contents.
3. Introduction: presents the objectives of the Report, as well as the context in which it is inserted.
4. Methodology for the preparation of the Report (VLR): route of action implemented in the different stages of the voluntary review.
5. Architecture, policy and enabling environment presents in a disaggregated manner the initiatives that have been undertaken for the implementation of the Agenda for the Year 2030 within the framework of subnational public policy (programs, projects, and actions).
6. Progress on SDGs and targets: Overview of progress and status of the SDGs. This can be in a transversal way, prioritizing the SDGs that are considered relevant for the subnational government.
7. Next steps: outline of the subnational (State or Local) government's forward-looking roadmap for continued work on the implementation of the 2030 Agenda.
8. Conclusion.
9. Annexes.

Nodes for the Promotion of the 2030 Agenda (NODESS)

NODESS (Nodes for the Development of Social and Solidarity Economy) are voluntary integration alliances made up of at least three actors; Local Government, Academia and Social Sector, through which territorial solutions to collective needs

are proposed, designed, and implemented. Since 2019, INAES (National Institute of Social Economy) has been promoting the creation of this type of alliances to consolidate local ecosystems [23].

The National Network of NODESS is a network made up of networks for in support of a NODESS-style community and solidarity economy. According to the statistics for the year 2023, 443 NODESS are registered nationwide; with alliances between Universities, Technological, Ejidos, Cooperatives, Social Groups, Governments, Companies, Chambers of Commerce, and others. Of the 443; 183 are PreNODESS and 260 NODESS, the States with the highest number of NODESS are Tamaulipas 66, Oaxaca 30, Veracruz 29, Chiapas 26, and Michoacán with 23. The key allies of the NODESS Network in Mexico are the Ministry of Public Education (SEP), Mayan Train, Sowing Life; Sustainable Communities Program, German Cooperation Agency GIZ, International Labor Organization (ILO), United Nations (ECLAC), The National Council for Science, Technology, and the Humanities (CONAHCYT) [24].

On June 16, 2023, the National Institute of Social Economy (INAES) accredited 120 NODESS of the TecNM Solidarity Economy Network, generating a total of 251 nodes at the National Technological Institute of Mexico (TecNM). In the case of NODESS TIJUANA, it is made up of the Alliance of the Technological Institute of Tijuana, the Municipal Institute of Citizen Participation of the Tijuana City Council, and the Northern Border Cooperative Union. NODESS TIJUANA has been in operation since 2019, it was the first NODESS on the Northern Border of Mexico [25]. NODESS Tijuana has specialized in training and awareness processes of the SDGs, Culture, Education and Food Sovereignty.

RIESS Research Network

In 2023, NODESS Tijuana evolved into a TecNM RIESS Research Network (Social and Solidarity Economy Research Network) of TecNM, seeks to promote research and development in the field of social and solidarity economy, the Sustainable Development Goals (SDG) in Mexico, the RIESS Network has the participation of researchers from various regions of the country and internationally [26]. Some key points about the RIESS Network include:

1. **Organization:** The network is organized through a Board of Directors that integrates regional leaders from different educational and research institutions.
2. **Objectives:** The development of human resources, the establishment of professional residencies, and the provision of social assistance are among its goals, as well as the development of research projects and undergraduate and graduate theses.

3. **Methodology:** It uses methodological intervention tools such as the Fifth Systemic Helix (QHS), which includes collaboration between government, academia, companies, associations, and consultants.
4. **Approach:** It focuses on the analysis of sectoral ecosystems in different regions of the national territory, aligning with the National Strategic Plans (PRONACES) and SDGs as defined in the 2030 Agenda of the United Nations for Sustainable Development.

RIESS Network integrates researchers from North, Central and Southern Mexico, with approximately 97 teachers, researchers, and strategic allies from Higher Education Institutions and a Scientific and Technological Humanities Council of the Nation (CONAHCYT) Research Center).

National Technological Institute of Mexico (TecNM)

The National Institute of Technology which is in Mexico (TecNM) is a public institution of higher education that brings together 254 technological institutes distributed in the 32 states of the country. Wide coverage, with a presence throughout the country, TecNM serves more than 620,000 students. Founded in 2014, TecNM's mission is to offer quality technological education, promote research and development, and contribute to the social and economic progress of Mexico [27].

Academic Body for Applied Research – ITTIJ-CA-12

The ITTIJ-CA-12 Academic Body is registered with the title: “SECTORIAL COMPETITIVENESS, SOCIAL INNOVATION AND SUSTAINABLE DEVELOPMENT” and as the National Research Network of the TecNM, with 2 General Lines of Knowledge Application (LGAC) [28, 29].

1. **QHS Systemic Development and Public Policies for Sustainable Innovation:** The key characteristics of the QHS Methodology are multi-sector cooperation, collaboration between universities, companies, governments, civil society associations, researchers, and consultants, for the analysis of Public Policies for Sustainable Innovation providing systemic indicators of efficiency, efficacy, effectiveness, productivity and competitiveness of labor, professional and research skills.
2. **Administration and Social Economy for Technological Humanism:** It focuses on the integration of ethical and humanistic principles, Social Economy; it seeks social well-being and sustainable development. Management focuses on the management of resources and processes for organizational objectives with social responsibility in the community. Technological Humanism promotes critical thinking to put technology at the service of the human condition and its continuous improvement of being and organizations.

QHS Methodology for Systemic Development and Integration (Evolution of the Triple Helix)

The Fifth Systemic Helix (QHS) is a methodology that evolved from the Triple Helix Model, integrating a systemic approach to assess competitiveness and foster innovation and development in various sectors. This methodology includes five key actors: academia, industry, government, associations, and specialized consultants [30].

Key Features of QHS:

1. **Systemic Approach:** Unlike the Triple Helix, the QHS incorporates a more holistic analysis, considering the interaction between the different actors and their impact on the environment.
2. **Diverse Applications:** It has been used in different sectors of society, both public and private.
3. **Innovation and Development:** It promotes collaboration between actors to promote innovation and sustainable development.

Using Fifth Helix Methodology (QHS) as a focal point, the value, and advantages of collaborating with public and private sector representatives are demonstrated. These stakeholders include government, businesses, academic institutions, associations, business chambers, and consultants. Regular small-scale initiatives starting at the local level in a city can have an impact on public awareness campaigns. In addition, the relationship of the Society with each SDG, its sense of belonging there, as well as the degree to which it entails social accountability should be considered. The National Institute for Federalism and Local Development (INAFED) is working with the academic community to educate the public, in City Halls, about the SDGs of the 2030 Agenda using mass media such as social media and giant screens to disseminate information about the goals. Local governments are also participating in this effort through their Municipal Development Plans. It is estimated that Tijuana has a population of 2.1 million inhabitants, which places it among the cities with the highest population in the country and among the first 6 most populated metropolitan areas in the Mexican Republic.

Additionally, attempts have been made to provide the resources required for the city of Tijuana, Baja California; for example, on the most well-known avenue in the city, Avenida Revolución, there is a giant screen that can display information to more than 85,000 people every day. Several initiatives have been developed at the Tijuana Institute of Technology of TecNM. One of them is the Research Project, supported through the RIESS Research Network and the Municipal Institute for Citizen Participation of Tijuana, collaborating with more than 100 academics from all over the country and internationally. With strategic allies such as the CIATEJ - CONAHCYT Research Center and the University of Guadalajara, it has also participated in the

first Voluntary Local Report (VLR) of the City of Tijuana within the framework of the Fourth Voluntary National Report (VNR) of Mexico 2024 [31].

Tijuana Voluntary Local Report (Tijuana’s first VLRs)

After a description of each key conceptual aspect, Figure 1 describes the methodological strategy for preparing the Voluntary Local Report (VLR) for Tijuana 2024, and the eventual action of replicating the model in other cities through the TecNM RIESS Research Network.

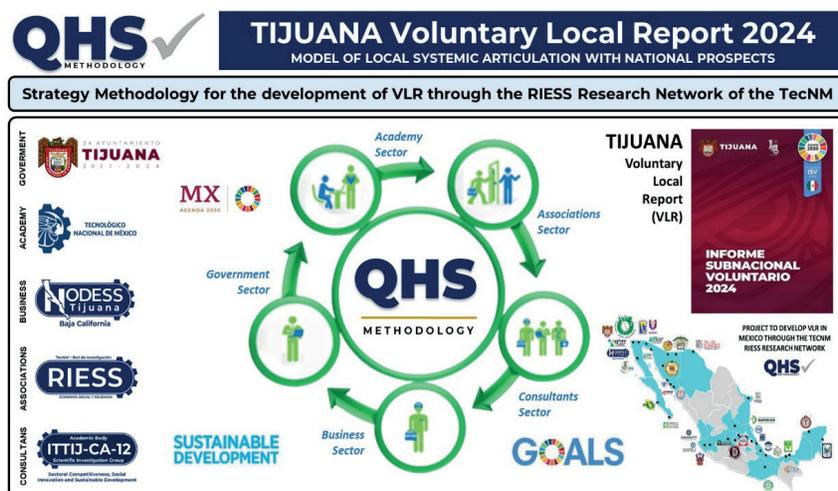


Figure 1. Methodological Strategy to develop the Tijuana 2024 VLR.

2. METHODOLOGY

This Voluntary Local Review (VLR) is the first review of progress toward the 17 Sustainable Development Goals (SDGs) by the City of Tijuana. It is based on the first VLR of Tijuana in 2024, sharing the sum of efforts of the different sectors of society, under the academic leadership of the Technological Institute of Tijuana (ITT) of the National Technological Institute of Mexico (TecNM), under its systemic methodological mechanisms of strategic articulation to join forces. Coordinating the collaboration of Academia, Government, Companies, Associations and Consultants (application of the QHS Methodology), through the ITIJ-CA-12 Academic Body, NODESS Tijuana and the RIESS Research Network of the TecNM. Below are the results of the activities

developed to achieve the First VLR of Tijuana 2024. The VLR archive is currently in the UN Databases; SDG Localization and the Voluntary Local Reviews [32].

Tijuana 2024 Voluntary Local Review (VLR)

Within the framework of the program of activities of the 4th. Voluntary National Report (VNR) of Mexico, on July 10, 2024 in Mexico City prior to the High-Level presentation at the United Nations in New York, the First Voluntary Local Report (VLR) of the 2030 Agenda of the City of Tijuana was presented by Juan Manuel Gastelum Rivera, private secretary of the Presidency of the City of Tijuana, chaired by Mayor Montserrat Caballero Ramírez.

The VLR 2024 integrates the experience and good practices carried out in Tijuana, a strategic municipality on Mexico's northern border. Tijuana is the city where the homeland begins, it is the gateway to Latin America and the most populous municipality in Mexico, with more than two million inhabitants, which makes the City of Tijuana a Metropolis. The first VLR of Tijuana 2024 had the Technical and Methodological Advice of Professor and Researcher, Dr. Rodolfo Martínez Gutiérrez of the Technological Institute of Tijuana.

The Municipal Development Plan of the City of Tijuana has strategic axes that are aligned with the 2030 Agenda: (see Table 5)

- a) Safety Axis; SDG 16.
- b) Infrastructure Axis; SDG 6, SDG 7, SDG 11, SDG 13, SDG 14, SDG 15.
- c) Economy Axis; SDG 1, SDG 8, SDG 9, SDG 10, SDG 12. SDG 3, SDG 4.
- d) Welfare Axis; SDG 3, SDG 4.
- e) Honesty Axis; SDG 2, SDG 5, SDG 17.

The strategic alignment of the Sustainable Development Goals (SDGs) of the United Nations Organization was implemented in the initial phase of the design and development of the Municipal Administration, through the public call for the organization of consultation forums in the different sectors of society, through the Municipal Institute of Citizen Participation of the City of Tijuana [33].

The Technological Institute of Tijuana actively participates as a Vocal Owner of the Sectoral Subcommittee of Economic Development, Tourism and Border Affairs. With the aim of collaborating in projecting Tijuana as a central, metropolitan, and binational city of global character, attractive for investment and tourism, where entrepreneurship and economic growth are promoted by institutions with high links

and competition with the different sectors of society. That generates a development ecosystem, with well-qualified and paid work for citizens and entrepreneurs, where they find a space for dialogue, convenience, and negotiation that, added to its geographical and comparative advantage, make it a benchmark for economic prosperity.

ALIGNMENT	Guiding Principles of the Municipal Development Plan of Tijuana 2022-2024				
	Safety	Structure	Economy	Welfare	Honesty
UN 2030 Agenda					
SDG 1: No poverty			o		
SDG 2: Zero hunger					o
SDG 3: Good Health and Well-Being				o	
SDG 4: Quality education				o	
SDG 5: Gender equality					o
SDG 6: Clean water and sanitation		o			
SDG 7: Affordable and clean energy		o			
SDG 8: Decent work and economic growth			o		
SDG 9: Industry, innovation, and infrastructure			o		
SDG 10: Reduced inequalities			o		
SDG 11: Sustainable cities and communities		o			
SDG 12: Responsible consumption and production			o		
SDG 13: Climate action		o			
SDG 14: Life below water		o			
SDG 15: Life on land		o			
SDG 16: Peace, justice, and strong institutions	o				
SDG 17: Partnerships for the goals					o

Table 5. SDGs in Tijuana’s Municipal Development Plan (2021-2024)

The actions promoted by the Municipal Institute of Citizen Participation, and the Metropolitan Institute of Planning, both City of Tijuana, favored the work developed by NODESS TIJUANA, RIESS Research Network (Social and Solidarity Economy Research Network), as well as the ITTIJ-CA-12 Academic Body, of the Tijuana

Institute of Technology. They represented a key piece for the development of the First Local Voluntary Report of Tijuana 2024 (see Figure 2). The work developed involved the alignment and empowerment of all participants for such an important project of social impact in the city. That is why NODESS TIJUANA is assigned credit for complying with one of its main thematic axes as a program of the federal government, addressing issues of social order, social economy and environment, this last thematic axis, was aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda, as well as influencing the National Strategic Programs of the Government of Baja California [34], and National Development Plan of Mexico [35].

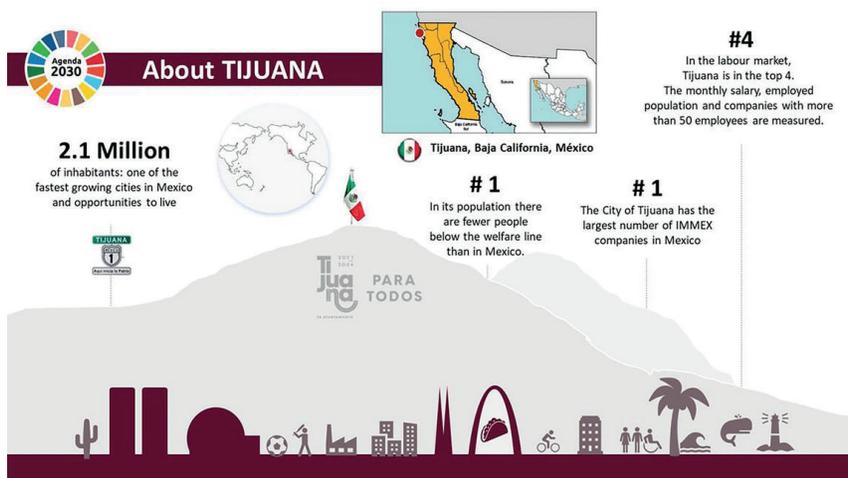


Figure 2. Geographical location of the Municipality of Tijuana (2024)

The city of Tijuana, located in the State of Baja California, is recognized for its slogan “Here the Homeland Begins”, for being in the most geographically northwestern part of Mexico. Likewise, Tijuana is known worldwide for being the border with the largest binational crossing of people, the city of opportunities for development and social progress.

Tijuana currently has more than two million inhabitants, ranks first in welfare statistics at the national level, ranks first in installation of foreign investment companies, ranks fourth in the labor market and with it the cities with the lowest unemployment rate. The activities developed to promote empowerment and understanding of the importance of the Sustainable Development Goals (SDGs) of the UN 2030 Agenda in the City of Tijuana have evolved over the years, something similar happened in different parts of the world, because it is a process of empowerment

and awareness. The academic sector being a key piece; with the roles of promoter, manager, and articulator under a systemic integration approach.

The formation of the NODESS TIJUANA previously explained (see Figure 3), was key to the process of raising awareness and generating a public agenda of the SDGs in the different sectors of society in the city of Tijuana, which has evolved and has added to other cities in Mexico and internationally through academic outreach activities.

In 2015, the unanimous adoption of the 2030 Agenda (2015-2030) established by more than 193 UN member countries was promoted. In that international agreement, Mexico developed public policies and programs aligned to inform the different public and private sectors of the importance of the Sustainable Development Goals (SDGs), a continuation of the Millennium Goals (2000-2015). For example; in the academic sector, it was established that Professors should explain the SDGs in classes, in projects and generate environmental awareness, on the other hand, the Federal Government, established that the Municipal Governments include the SDGs in the Municipal Development Plans, as a strategy for the development of local public policies that guide efforts so that the public administration, society and academic training will generate aligned actions to influence the indicators of the goals of the 17 SDGs.

For the year 2020, a Social Service program was started at the Technological Institute of Tijuana to raise awareness among students of different educational levels. In 2021, the SDGs were included in the Municipal Development Plan of the City of Tijuana. In 2022, NODESS TIJUANA was formed, an alliance of the academic sector, local government and social sector, the main promoter of the 2030 Agenda in Tijuana. In 2023, a historic goal of training 10,250 students was achieved through NODESS TIJUANA. And finally in 2024 NODESS TIJUANA managed to promote and take the lead in the City of Tijuana, the LVR Tijuana 2024 was promoted by the Commission for the Promotion of the Social and Solidarity Economy of Tijuana, to development of the First Local Voluntary Report, currently registered in the UN Database [36].

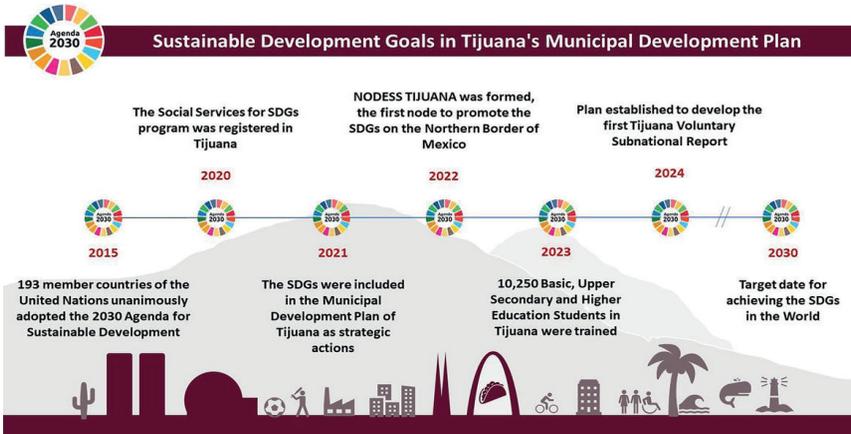


Figure 3. Chronology of actions of the 2030 Agenda in Tijuana (2024)

3. KEY RESULTS

The First Voluntary Local Report 2024 of Tijuana (LVR) of the 2030 Agenda places the city of Tijuana as the first city in northwestern Mexico to present it. The City of Tijuana is located at the national level with a leading role, for promoting actions of a global agenda, such as 17 UN SDGs. Figure 4 presents in detail the current results of the SDGs in the national comparison of the Sustainable Cities Index report generated by the Citibanamex Group [37].



Figure 4. Progress on the SDGs in Tijuana (2024)

The learning curve generated in the development of the First LVR of Tijuana 2024, it is planned to replicate the intervention and systemic articulation model in other cities in Mexico (see Figure 5) through Members of the RIESS Research Network.



Figure 5. LVR project in Mexico with the RIESS Network (2024)

Outstanding actions of the Voluntary Local Report (LVR) Tijuana 2024

During the planning process of the LVR, a program of various activities was developed between the City of Tijuana and the Technological Institute of Tijuana with the initial objective of disseminating the 17 SDGs of the 2030 Agenda in the population, a Social Service program was generated so that Undergraduate and Graduate Students could collaborate with Professors in other Basic Education Institutions. Upper and High School, including at the Graduate level, from these activities it was possible to train and sensitize approximately 10,500 students, including deaf and mute children, who were given an explanation through a Mexican Sign Language Instructor, the children interacted and were motivated by the importance of knowing the importance of the 17 SDGs.

Table 6 shows the dynamics of the various activities generated within the framework of the Voluntary Local Report (VLR) Tijuana 2024 development project; Consultation forums in Schools, Seminars and Colloquiums on the importance of the 2030 Agenda and the 17 SDGs, development of Collaboration Agreements between Academic Bodies and Research Groups specialized by Lines of Generation and Application of Knowledge, in this sense the leadership of the activities that promoted the LVR Tijuana 2024 was the Academic Body with ITTIJ-CA-12 registration of the

Technological Institute of Tijuana. The inter-institutional team for the development and presentation of the first Voluntary Local Report (VLR) Tijuana 2024 was formed, contact was made with the liaison offices of the 2030 Agenda in Mexico for the presentation at the UN in New York, and registration of the document in the UN Database for global consultation. The VNR of Mexico 2024 was presented in four languages (see Figure 6); Spanish [38], English [39], Mayan [40] Nahuatl [41].



Figure 6. VNR of Mexico in Four Languages; English, Spanish, Mayan, and Nahuatl (2024)

SDG	Actions developed to achieve the goals
	<p>Lines of action focused on SDG 1 were created:</p> <ul style="list-style-type: none"> To benefit the low-income population with economic support, carrying out the social assistance program for the elderly. Implement the “Comprehensive Plan for the Care of Children in Street Situations”. Benefiting more than 6,000 people.
	<p>Lines of action focused on SDG 2 were created:</p> <ul style="list-style-type: none"> More than 28,000 pantries have been delivered to different communities. In addition, 31,981 pantries were delivered to vulnerable people in neighborhoods of the 9 delegations. Likewise, 27,084 pantries were delivered to the elderly, people with disabilities and indigenous communities. Our municipality also has a school breakfast program that ensures that children have nutritional elements throughout the school year.

 <p>3 GOOD HEALTH AND WELL-BEING</p>	<p>49 lines of action focused on SDG 3 were created:</p> <ul style="list-style-type: none"> ▮ Provide psychological support. ▮ Deliver the DARE program in educational facilities. ▮ Establish agreements linked to organizations in the social, public, private, and academic sectors in the field of addiction prevention and care. ▮ Vaccination days for vulnerable groups ▮ Artistic, sports and nutritional activities ▮ Programs for social reintegration
 <p>4 QUALITY EDUCATION</p>	<p>29 lines of action focused on SDG 4 were created:</p> <ul style="list-style-type: none"> ▮ Strengthen the English program in elementary schools. ▮ Promote refresher and professional training programs for teachers. ▮ Hold events in municipal libraries to promote literary and scenic activities. ▮ Promote a book donation program. ▮ Strengthening academic linkages to support the development of young people. ▮ Provide incentives for young people not to drop out of school. ▮ Provide care for children with disabilities in public schools. ▮ Benefiting more than 23,000 students in the city.
 <p>5 GENDER EQUALITY</p>	<p>8 lines of action focused on SDG 5 were created:</p> <ul style="list-style-type: none"> ▮ The implementation of the mobile application “Purple Button” ▮ Carrying out campaigns commemorating the “International Day for the Elimination of Violence Against Women” ▮ Creation of agreements with organizations to strengthen women’s entrepreneurship ▮ Provide protection to women victims of family violence.
 <p>6 CLEAN WATER AND SANITATION</p>	<p>Lines of action focused on SDG 6 were created:</p> <ul style="list-style-type: none"> ▮ Ensure sustainable water and sanitation management for everybody. Currently in Tijuana, 98% of the homes in the city have piped water service and 99% have electricity and drainage. ▮ To raise that remaining 2%, a line of action was implemented which consists of establishing the efficient service of drinking water and sanitary sewerage for our citizens, a collaboration agreement between our City Council and the ▮ State Commission of Public Services of Tijuana, with which various dynamics were promoted for the benefit of the network and its service capacity.
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>5 lines of action focused on SDG 7 were created:</p> <ul style="list-style-type: none"> ▮ Transition to LED energy, 10,000 luminaires were replaced. ▮ Environmental education workshops ▮ Regulation 373 businesses enrolled in the “Green Business” program. ▮ Municipal Air Quality Monitoring Program, a total of 50 sensors donated by the Air Resources Board.

	<p>33 lines of action focused on SDG 8 were created:</p> <ul style="list-style-type: none"> ▮ Job fairs were implemented and granting of credits. ▮ Promotion and dissemination of the job bank program ▮ Training for women in the acquisition of work tools ▮ Facilitating and promoting the development of new businesses ▮ Boosting investment in equipment and technology in companies ▮ Generation of employment for the elderly ▮ Implementation of the labor inclusion program for people with disabilities. ▮ More than 5,000 grants have been awarded to entrepreneurs. 58,090 vacancies have been offered through the job fairs
	<p>6 lines of action focused on SDG 9 were created:</p> <ul style="list-style-type: none"> ▮ Encourage robust infrastructure, sustainable industry, and innovation. Green Business Certification Program ▮ Implement digital tools for urban development procedures! ▮ Provide technological education for the use of the internet.
	<p>19 lines of action focused on SDG 10 were created:</p> <ul style="list-style-type: none"> ▮ The creation of campaigns for the dissemination of culture and indigenous languages of the different ethnic groups. ▮ Creation of a network for the care of migrants. Implementation of an awareness campaign on respect for places intended for the elderly and disabled. ▮ Generation of the awareness program on the culture of disability, such as the first and second binational forum on accessibility criteria "Tijuana Access".
	<p>56 lines of action focused on SDG 11 were created:</p> <ul style="list-style-type: none"> ▮ Implement road safety education programs. ▮ Carry out a technical study for the reorganization of cargo or heavy transport. ▮ Design actions for traffic reengineering in conflict areas. ▮ Implement "Kilometers of Light" and "Put a Finger on the Garbage Dump" programs
	<p>2 lines of action focused on SDG 12 were created:</p> <ul style="list-style-type: none"> ▮ Establish an area to deposit waste and materials from construction sites. ▮ Implement the program of improvement and optimization in domestic garbage collection.
	<p>2 lines of action focused on SDG 13 were created:</p> <ul style="list-style-type: none"> ▮ Solar lamps were installed for parks and green areas. ▮ The "Improvement of the Environmental Quality of Tijuana" program was consolidated through afforestation days. ▮ The planting of trees in different parts of the city was promoted. ▮ Training and workshops were given to promote awareness of environmental care.

	<p>Lines of action focused on SDG 15 were created:</p> <ul style="list-style-type: none"> ■ Manage forests sustainably, battle desertification, reverse land degradation, and prevent biodiversity loss. ■ We have two lines of action. ■ Promote the Unit for the Conservation, Management and Use of Wildlife (UMA) of Parque Morelos. ■ Establish the program “Rehabilitation and Conservation of Municipal Parks”
	<p>102 lines of action focused on SDG 16 were created:</p> <ul style="list-style-type: none"> ■ Implement the “Community Watch per Person” program. ■ Addressing high-impact crimes and drug dealing ■ Implement panic buttons for emergency response. ■ Create Criminal Intelligence Units (UIC) ■ Creation of a system of social and economic indicators ■ Community Care Campaigns ■ Establish the Municipal System of Comprehensive Protection for Children and Adolescents ■ To train public servants in transparency issues, ■ Promote a transparent government that is close to the people. ■ Strengthening citizen participation in the work of the public administration through citizen councilors organized into 18 Sectoral Subcommittees through which compliance with the Municipal Development Plan is evaluated and monitored.
	<p>Lines of action focused on SDG 17 were created:</p> <ul style="list-style-type: none"> ■ To be the first Binational World Design Capital by 2024, alongside San Diego ■ Join “GCoM,” which stands for the Global Covenant of Mayors on Climate and Energy in Mexico, making a commitment to implement climate action policies and be one of the 18 pilot municipalities of the 2023 National Strategy, to revitalize the Global Partnership for Sustainable Development.
<p>Reference: Own elaboration (2024) with information from the First VLR of Tijuana</p>	

Table 6. VLR Tijuana 2024 Executive Summary of Results

4. CONCLUSIONS AND REFLECTIONS

According to the Sustainable Cities Index 2023 generated by Citibanamex in collaboration with the Mexican Institute for Competitiveness A.C. (IMCO), Foundation Mexico and Mario Molina Center, it is necessary to highlight the progress made in SDG 13 Climate Action, due to the existence and operation of an Urban Planning Institute, work on the climate action plan or cooperation with the State Action Plan on Climate Change; in the same way, SDG 17 Alliances to achieve the goals stands out, due to the good management of financial debt, the excellent functioning of the City Council’s Transparency office or the wide access to the internet existing in homes; in the same sense, the achievements in Particularly relevant to Baja California

is SDG 6, which focuses on clean water and sanitation. It is state-run, but for its operation it requires the collaboration of CONAGUA (National Water Commission) and the Secretariat of Territorial, Urban and Environmental Development. Tijuana ranks 35th out of 81 cities, obtaining an overall result of 64.95, with an increase of 1.3 percentage points compared to the results obtained in 2015 [42].

Degrowth is an intentional tactic that challenges the prevailing economic model based on constant expansion. It defends the search for balance in economies, while achieving social and environmental purposes. It involves reducing areas Examples of things that harm the environment include fossil fuels, factory-farmed meat and dairy products, fast fashion, marketing, transportation, and air travel (including personal jets). It is essential to put an end to the planning of obsolescence of products and extend their durability. Improve public services essentially to ensure that Everyone, regardless of their background or circumstances, should have equal and unrestricted access to essential services such as healthcare, education, housing, transportation, internet connectivity, renewable sources of energy, and nutritious, high-quality food options [43].

Sustainable development is a different way of approaching conventional economic progress. It seeks to revitalize capitalism by merging technological advances, green investments, and responsible consumption to make it more sustainable. Key elements include technological advances, such as investment in and integration of technologies that minimize the impact on the environment (e.g., renewable energy, infrastructure to improve energy efficiency). Green investments to direct the flow of capital towards initiatives that care for the environment, such as renewable energy and sustainable agriculture. Similarly, Ecological Consumerism aims to motivate buyers to opt for choices that take care of the planet, supporting items and services that are sustainable. Consequently, sustainable innovation is defined as a strategy that fuses technological creativity with the preservation of the environment, with the purpose of generating beneficial effects for both people and nature. Its attributes include ecological commitment, the use of renewable energies, social influence, clean technologies, economic viability, innovative business models, shared transport, and the offer of products as a service [44].

The search for a balance between technological progress, social well-being and environmental preservation is the objective of sustainable innovation, with an eye on present and future generations. The main objective of this chapter of the book is to thoroughly examine and delve into the intricate concept of degrowth and sustainable growth from a multitude of perspectives, meticulously scrutinizing the diverse ways in which the various sectors of society exert their influence on the advancement and progression of the Voluntary Local Review (VLR) initiative in the City of Tijuana, Baja California, Mexico. This analysis is conducted within the framework of the RIESS Network, which aims to disseminate and replicate research

endeavors in numerous urban centers, facilitated by the synergistic collaboration between academic institutions and local governmental bodies [45].

For a project such as the SDGs to have an impact on society, will, synergies and teamwork are required, with leadership that inspire the new generations, generational renewal is a natural phenomenon that all nations must consider preparing awareness actions, and take advantage of the generational crossover, information technologies, social networks. They represent a very powerful means to have a positive impact through education and culture for sustainable development. The glocal approach aims to value or consider things or ideas from a global point of view, but without losing the local essence that characterizes them [46].

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A very special thanks to all the students of the NODESS TIJUANA Social Service Program for collaborating in the preparation of educational material for students at the Basic Education levels (Primary and Secondary).

To the people who work for the government, companies, groups, and academics of the RIESS Network. Especially our thanks to Professor Ramón Jiménez López, General Director of the National Technological Institute of Mexico (TecNM) who has the responsibility of the largest Technological Higher Education Institution in Mexico, with approximately 600,000 students in 254 Campuses throughout Mexico, with 28,988 Professors. And to Mr. José Guillermo Cárdenas López, Director of the Technological Institute of Tijuana, the largest TecNM Campus in Mexico with approximately 13,000 students, thank you for the trust and support for our professional and scientific development and thereby contribute from academia to the well-being and Mexican humanism of our country.



Figure 7. Activities to train 1 million students in SDGs in Mexico (2024)



Figure 8. Mexico 2024 Voluntary National Report (VNR) and Tijuana 2024 Voluntary Local Report (VLR) 2024.

REFERENCES

Webpage: [1] TecNM. New Educational Model [Internet]. 2024. Available from: <https://www.facebook.com/watch/?v=969291525113718> [Accessed: 2024-06-29]

Webpage: [2] Ministry of Public Education. Rules of Operation of the Program for Teacher Professional Development. [Internet]. 2022. Available from: <https://dgesui.ses.sep.gob.mx/sites/default/files/2022-05/Reglas%20de%20operaci%C3%B3n%20PRODEP%202022.pdf> [Accessed: 2024-06-29]

Webpage: [3] United Nations. Good Practices and Lessons Learned in VNR Reporting [Internet]. 2024. Available from: <https://hlpf.un.org/vnrs> [Accessed: [Accessed: 2024-07-04]

Journal article (published): [4] Al-Raei, M. (2023) Scopus-Based Study of Sustainability in the Syrian Higher Education Focusing on the Largest University. *Open Information Science*, Vol. 7 (Issue 1), pp. 20220149. Available from: <https://doi.org/10.1515/opis-2022-0149> [Accessed: 2024-07-04]

Webpage: [5] UNESCO. UNESCO and the Sustainable Development Goals. 2021. [internet] Available from: <https://es.unesco.org/sdgs> [Accessed: 2024-08-24]

Journal article (published): [6] Bedard-Vallee, Alexandre; James, Chris; Roberge, Guillaume (2023), "Elsevier 2023 Sustainable Development Goals (SDGs) Mapping", Elsevier Data Repository, V1, doi: 10.17632/y2zyy9vwzy.1 Available from: <https://elsevier.digitalcommonsdata.com/datasets/y2zyy9vwzy/1> [Accessed: 2024-07-04]

Journal article (published): [7] Alfirević N, Malešević Perović L, Mihaljević Kosor M. Productivity, and Impact of Sustainable Development Goals (SDGs)-Related Academic Research: A Bibliometric Analysis. *Sustainability*. 2023; 15(9):7434. <https://doi.org/10.3390/su15097434> [Accessed: 2024-07-04]

Webpage: [8] UN. The 17 Goals. [Internet]. 2024. Available from: <https://sdgs.un.org/goals> [Accessed: 2024-08-21]

Webpage: [9] UN Mexico. About our work for the Sustainable Development Goals in Mexico [Internet]. 2024. Available from: <https://mexico.un.org/es/sdgs> [Accessed: 2024-08-21]

Webpage: [10] UN. Lessons Learned & Best Practices Mexico [Internet]. 2024. Available from: <https://hlpf.un.org/countries/Mexico/lessons-learned-best-practices> [Accessed: 2024-08-21]

Webpage: [11] UNSTATS. Voluntary National Reviews (VNR) Advance Version [Internet]. 2024. Available from: https://unstats.un.org/sdgs/data-storytelling/documents/UNSD_Practical_Guide_for_Evidence-based_Voluntary_National_Reviews_Oct_2022_advance_version.pdf [Accessed: [Accessed: 2024-08-21]

Webpage: [12] ESCAP. Voluntary National Reviews (VNR) [Internet]. 2024. Available from: <https://www.unescap.org/2030-agenda/voluntary-national-reviews> [Accessed: 2024-08-24]

Book chapter: [13] Martinez Gutierrez, R., Lucas Bravo, G., Ernesto Jimenez Bernardino, A., & Daniel Padilla De la Rosa, J. (2024). Perspective Chapter: SDG 4, Educational Strategy and Awareness for Social Innovation in Sustainable Development. IntechOpen. doi: 10.5772/intechopen.1005252 [Internet]. 2024. Available from: <https://www.intechopen.com/online-first/1179686> [Accessed: 2024-08-24]

Webpage: [14] UN. SDG Localization and the Voluntary Local Reviews [Internet]. 2024. Available from: <https://sdgs.un.org/topics/voluntary-local-reviews> [Accessed: 2024-08-24]

Webpage: [15] UN. Voluntary National Review Mexico 2016 [Internet]. 2024. Available from: <https://hlpf.un.org/sites/default/files/vnrs/2021/10756Full%20report%20Mexico%20-%20HLPF%202016%20FINAL.pdf> [Accessed: 2024-08-24]

Webpage: [16] UN. Voluntary National Review Mexico 2018 [Internet]. 2024. Available from: https://hlpf.un.org/sites/default/files/vnrs/2021/20122VOLUNTARY_NATIONAL_REPORT_060718.pdf [Accessed: 2024-08-24]

Webpage: [17] UN. Voluntary National Review Mexico 2021 [Internet]. 2024. Available from: https://hlpf.un.org/sites/default/files/vnrs/2021/288982021_VNR_Report_Mexico.pdf [Accessed: 2024-08-24]

Webpage: [18] UN. Voluntary National Review Mexico 2024 [Internet]. 2024. Available from: <https://hlpf.un.org/sites/default/files/vnrs/2024/VNR%202024%20Mexico%20Report.pdf> [Accessed: 2024-08-24]

Webpage: [19] TecNM. INAES. Social and Solidarity Economy Nodes (NODESS). 2023. [internet] Available from: <https://view.genial.ly/64d544b0f052d7001a7347ac/presentation-subtema-333-nodos-de-economia-social-y-solidaria-nodess> [Accessed: 2024-07-04]

Webpage: [20] UN. High-Level Political Forum on Sustainable Development [Internet]. 2024. Available from: <https://hlpf.un.org/countries/mexico/voluntary-national-reviews-2024> [Accessed: 2024-08-21]

Webpage: [21] Government of Mexico. Methodological guide for the preparation of voluntary reports [Internet]. 2024. Available from: https://www.gob.mx/cms/uploads/attachment/file/894044/Gu_a_metodol_gica_ISV.pdf [Accessed: 2024-08-21]

Webpage: [22] INEGI. Population of Tijuana. 2024 [internet] Available from: <https://cuentame.inegi.org.mx/monografias/informacion/bc/poblacion/> [Accessed: 2024-08-24]

Webpage: [23] INAES. National Network of NODESS 2024. [internet] Available from: https://sinca.gob.mx/nodess_red_nacional [Accessed: 2024-07-04]

Webpage: [24] CONAHACYT. Progress and Results on SDGs and PRONACES. 2021 [internet] Available from: <https://www.siiicyt.gob.mx/index.php/transparencia/informes-conacyt/programa-institucional-2/4970-logros-pi-2021/file> [Accessed: 2024-08-21]

Webpage: [25] Tijuana Institute of Technology. TecNM Tijuana campus achieves the first NODESS in the Northern Border of Mexico. [Internet]. 2022. Available from: <https://www.tijuana.tecnm.mx/tecnm-campus-tijuana-logra-ser-el-primero-nodess-en-la-frontera-norte-de-mexico/> [Accessed: 2024-07-04]

Webpage: [26] Ciudad Juarez Institute of Technology. National Research Network in Social and Solidarity Economy RIESS Network. [Internet]. 2023. Available from: <http://cdjuarez.tecnm.mx/blog/nota/1136/nueva-red-nacional-de-investigacion-en-economia-social-y-solidaria--riess--del-tecnm> [Accessed: 2024-07-04]

Webpage: [27] Huatabampo TecNM. National Research Network RIESS [Internet]. 2024. Available from: <https://www.huatabampo.tecnm.mx/el-instituto-tecnologico-de-huatabampo-se-une-a-la-red-riess-en-colaboracion-con-el-tecnologico-nacional-de-mexico/> [Accessed: 2024-08-24]

Webpage: [28] National Technological Institute of Mexico. TecNM Research Networks. 2021. [internet] Available from: <http://redes-investigacion-tecnm.mx/> [Accessed: 2024-08-21]

Webpage: [29] National Technological Institute of Mexico. Statistical PRODEP Profile. 2021 [internet] Available from: <https://prodep.dpil.tecnm.mx/estadistica/estadisticas2021.pdf> [Accessed: 2024-08-21]

Book chapter: [30] Martinez-Gutierrez, R. (2024). QHS Methodology Applied to Professional Growth with Impact on Society. IntechOpen. doi:10.5772/intechopen.112559 [Internet]. 2024. Available from: <https://www.intechopen.com/chapters/88142> [Accessed: 2024-08-21]

Webpage: [31] CIATEJ. Formation of NODESS-CIATEJ Food Sovereignty. 2022 [internet] Available from: <https://ciatej.mx/el-ciatej/comunicacion/Noticias/Conformacion-del-NODESS--CIATEJ-Soberania-Alimentaria-/336> [Accessed: 2024-08-24]

Webpage: [32] UN SDG Tijuana VLR 2024. [Internet] Available from: <https://sdgs.un.org/sites/default/files/2024-11/ISV%20TIJUANA%202024.pdf> [Accessed: 2024-10-31]

Webpage: [33] Tijuana. Municipal Development Plan 2022-2024. [Internet] Available from: <https://www.tijuana.gob.mx/pmd/> [Accessed: 2024-08-24]

Webpage: [34] Government of Baja California. State Development Plan 2022-2027 del [Internet] Available from:

Webpage: [35] Government of Mexico. National Development Plan 2029-2024 [Internet] Available from: <https://www.gob.mx/agricultura/documentos/plan-nacional-de-desarrollo-gobierno-de-mexico-2019-2024> [Accessed: 2024-06-29]

Webpage: [36] Tijuana Institute of Technology. Commission for the Promotion of the Social Economy Set Up. 2020. [internet] Available from: <https://www.tijuana.tecnm.mx/instalacion-comision-de-impulso-a-la-economia-social/> [Accessed: 2024-08-24]

Webpage: [37] Citibanamex. Sustainable Cities Index Mexico. 2024 [Internet] Available from: <https://www.banamex.com/resources/pdf/es/personas/compromiso-social/indice-de-ciudades-sostenibles-2021.pdf> [Accessed: 2024-08-24]

Webpage: [38] Government of Mexico. VNRs. Spanish [Internet]. 2024. Available from: <https://www.economia.gob.mx/secna2030/infvol/INVMX2024Espanol.pdf> [Accessed: 2024-08-24]

Webpage: [39] Government of Mexico. VNRs. English [Internet]. 2024. Available from: <https://www.economia.gob.mx/secna2030/infvol/INVMX2024English.pdf> [Accessed: 2024-08-24]

Webpage: [40] Government of Mexico. VNRs. Maya [Internet]. 2024. Available from: <https://www.economia.gob.mx/secna2030/infvol/INVMX2024Maya.pdf> [Accessed: 2024-08-24]

Webpage: [41] Government of Mexico. VNRs. Nahuatl Spanish [Internet]. 2024. Available from: <https://www.economia.gob.mx/secna2030/infvol/INVMX2024Nahuatl.pdf> [Accessed: 2024-08-24]

Webpage: [42] IMCO. Sustainable Cities Index 2021. [Internet] Available from: <https://imco.org.mx/indice-de-ciudades-sostenibles-2021/> [Accessed: 2024-08-24]

Book chapter: [43] Martinez-Gutierrez, R., Solis-Quinteros, M.M., Ibarra-Estrada, M.E., Hurtado-Sanchez, C., Carey-Raygoza, C.E., Chavez-Ceja, B. (2022). Observatory for the Development of 2030 Goals and the Circular Economy in Baja California. In: Ahram, T., Taiar, R. (eds) Human Interaction, Emerging Technologies, and Future Systems V. IHIT 2021. Lecture Notes in Networks and Systems, vol 319. Springer, Cham. Available from: https://doi.org/10.1007/978-3-030-85540-6_163 [Accessed: 2024-10-08]

Book chapter: [44] Martínez-Gutiérrez, R., Solís-Quinteros, M.M., Sánchez-Hurtado, C., Carey-Raygoza, C.E. (2021). Challenges for an Observatory of the 2030 Goals, SDG and Social Economy, in Northern Mexico. In: Goonetilleke, R.S., Xiong, S., Kalkis, H., Roja, Z., Karwowski, W., Murata, A. (eds) *Advances in Physical, Social & Occupational Ergonomics*. AHFE 2021. *Lecture Notes in Networks and Systems*, vol 273. Springer, Cham. Available from: https://doi.org/10.1007/978-3-030-80713-9_24 [Accessed: 2024-10-08]

Webpage: [45] RIESS Research Network TecNM 2024. [Internet] Available from: <https://www.red-riess.mx/> [Accessed: 2024-12-15]

Webpage: [46] Catedra UNESCO 2024. Glocal Definition [Internet] Available from: <https://catedraunescoeads.es/wp-content/uploads/2023/03/4.-voz-sostenibilidad-enfoque-GLOCAL.pdf> [Accessed: 2024-12-15]