

# Global Health: How to contribute to the challenge of leaving no one behind?

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**Abstract:** Global health is premised on improving and equitable health for all people in the world. The Sustainable Development Goals set by the 2030 agenda are effort agreed by 193 countries that contributes to the achievement of the overarching goal of global health, how can we help to leave no one behind? This article will address an important strategy for addressing global health challenges, international technical-scientific cooperation, and how we can monitor and evaluate their use so these actions effectively contribute to the social and economic progress of the parties involved. Thus, this study aims to report the experience and methodology used by the Laboratory of Technological Innovation in Health (LAIS) of Federal University of Rio Grande do Norte (UFRN) to evaluate the international technical-scientific cooperation developed within the national project to combat the syphilis epidemic in Brazil. It is an applied research, with inductive-deductive argumentation and qualitative approach. The themes of International Technical Cooperation, indicators and performance measurement systems were analyzed in the literature in order to reach a broader understanding of the subject and the research object, resulting in the conceptual model of a performance measurement system. The research sources came from books, scientific articles, theses, dissertations, official government documents and technical reports available in electronic media. The results show that multidisciplinary collaborative actions are able to overcome health challenges, acting on their determinants and promoting solutions through technological development. Finally, the conceptual model of a performance measurement system proposed for a Higher Education Institution is briefly presented.

**Keywords:** Global Health, Sustainable Development Goals, International Cooperation, Syphilis

## I. INTRODUCTION

Global health is an area of study, research and practice that aims to improve health and achieve health equity for all people around the world. [1] Despite the great achievements of this area, many challenges still need to be overcome. In September 2015, 193 United Nations Member States adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDG). All objectives directly or indirectly influence the achievement of global health, as they accompany a series of strategies that take into account the main determinants of health [1-2].

Following this premise, in May 2016, the World Health Assembly adopted the 2016–2021 strategy on global health challenges for sexually transmitted infections (STIs) [3]. Because every day more than 1 million people are infected with a curable Sexually Transmitted Infection. This strategy aims to control STIs and reduce their impact as a public health issue by 2030 [4].

Many countries have experienced difficulties with the incidence of these STIs. Using as an example we can cite Brazil's challenge in combating the syphilis epidemic (over the last five years, a steady increase in the number of congenital and acquired cases of syphilis in pregnant women has been observed. [5] National coverage for Syphilis confrontation called Syphilis Rapid Response Project, also known as "SífilisNão!" Although it is a National project, it includes in its scope international technical cooperation actions [6].

Given that one of the main concerns of SDG is that to leave no one behind, how to contribute to it? Cooperation between countries may be one of the answers to this question. This practice can help solve joint problems and share knowledge and best practices [7]. Although the importance of international cooperation is evident, there is a lack of indicators for evaluating the results of these actions established between international institutions and organizations. Apparently, this research seeks to contribute increasing knowledge in the area of performance measurement, since it is the fundamental importance to analyze whether the efforts and resources allocated to these actions contribute effectively to the social and economic progress of the parties involved also, to ensure that leaving no one behind. [8] The rest of the paper is organized as follows. The actions developed by the project "SífilisNão!" and the proposed conceptual model for measuring international cooperation performance are explained in section II e III. The methods for conducting this study are described in section IV. The results achieved so far are presented in section V. conclusion remarks are presented in section VI.

## II. INTERNATIONAL COOPERATIONS ACTIONS IN “SÍFILIS NÃO!”PROJECT

In order to optimize existing health capacities and promote knowledge sharing in the context of the "Sifilis Não!" Project, the implementation of the international cooperation actions celebrated by this project began in 2018 [9].

The International Cooperation Agreements signed between the Federal University of Rio Grande do Norte (UFRN) and Foreign Higher Education Institutions are formalized through the UFRN Secretariat of International Relations (SRI). The process for the officialization of a cooperation agreement is initiated from the interest of one of the parties involved in the agreement. This can be expressed by a teacher, research group, coordinator or head related to an internal UFRN body or even by an international partner [10].

Thus, LAIS, having in its essence the combination of knowledge in the areas of health, engineering, information and communication technologies, has intensified and strengthened its international agenda in recent years. These actions are part of the process of developing joint and collaborative actions between LAIS / UFRN and the Ministry of Health (MS). The experience of LAIS has taken this Laboratory to a level of national relevance and international prestige, being considered an important player in the scientific and technological development in Health in Brazil. LAIS has sought to align a research and development proposal that promotes health technological innovation across disciplinary boundaries in order to achieve research products directly applicable to SUS improvement in different areas of knowledge [11].

In all, 6 institutions from 8 countries on 4 continents (Europe, Asia, Africa and North America) are developing or have already developed some kind of collaboration in the scientific and technological development of the projects operated by LAIS. The Figure 1 below illustrates the partnerships developed by LAIS around the world. [10] [11].



Figure 1 International Scientific Technical Cooperation – “Sifilis Não!”Project

Most of the international actions developed with the countries presented above focus on the fight against syphilis, however it is observed that there is a greater number of actions taken with the United States of America (USA) and Portugal. In the US, the lab has developed and strengthened partnerships with the University of Massachusetts through Startup ConquerX. The main purpose of these activities is the development of a new diagnostic test for syphilis, patented by both institutions. Johns Hopkins University's Retrovirus Laboratory has also supported the development of technologies applied to fight syphilis. LAIS has as well participated in cooperative activities with other institutions in the US, such as the Harvard School of Public Health and the Massachusetts Institute of Technology in the development of public health projects.

In Portugal, cooperation agreements were signed with the University of Coimbra and the Open University of Portugal, both partnerships focus on strengthening applied research in the fields of education, communication, management and governance to respond to syphilis. In total 27 researchers participate in postgraduate programs (masters and doctorate) in the mentioned institutions and develop researches will have their products applicable to the reality of syphilis in the country.

Other institutions such as the University of Athabasca in Canada, the University of Lorraine in France, the Complutense University of Madrid and the Autonomous University of Barcelona in Spain are also partners in development product and research that will be applied to the case of Syphilis in Brazil. The focus of these partnerships has been: (a) the development of research and open educational resources for the qualification of communication processes, production and analysis of distance education actions in health in Brazil; (b) production of new formats and innovative audiovisual narratives to be applied in the field of health communication, distance education and dissemination of results achieved by the "Sifilis Não!" Project, (c) conducting joint research in the

areas of Learning analytics, Big data and Machine learning, whose results and / or developed technologies should be applied in the implementation of the situational analysis rooms contemplated in the “Sifilis Não!” Project (d) development of joint activities aimed at the mining and analysis of syphilis data, relating and Communication, Education and Health.

All these institutions have developed in partnership with LAIS products are applicable to the public health policies of their respective countries or even to global health, within the framework of the Agenda 2030 Sustainable Development Goals (SDGs). It is the fundamental importance to analyze whether the efforts and resources devoted to these actions effectively contribute to the social and economic progress of the parties involved

### III. CONCEPTUAL MODEL FOR PERFORMANCE MEASUREMENT

The definition of performance measurement systems is wide, there is a large number of publications surrounding the theme, consequently there is a considerable variability of definitions coming from the most diverse fronts, theoretical, practical, corporate, individual. However, all these definitions converge to the same sense, these systems act in search of an objective representation of reality. It is data that can support decision making and align the organizational strategy. They are used to reduce the subjectivity of systems and organizations, and essentially to measure the efficiency and effectiveness of processes, people or organizations. According to Kaplan and Norton (1997), what is not measured is unmanaged and what is unmanaged cannot be improved [12].

This measurement is understood and corroborated by authors such as Clark and Neely as being the set of resources, processes, methods, tools and indicators, structured to collect, describe and represent data, in order to generate information about multiple performance dimensions for users. different hierarchical levels. There are a range of approaches that range from the simplest and most easily applied indicator systems to the most complex. One of the most widespread systems in the literature and used in organizations is the balanced scorecard. The balanced scorecard is one of the most cited frameworks in the academic literature when it comes to performance measurement [13] [14]. Kaplan and Norton are pioneers in introducing the innovative idea of BSC.

The main purpose of BSC is, in addition to replacing, making changes to traditional performance measurement dimensions, which focused only on financial ratios for valuation [12]. The BSC aims at short and long term financial and non-financial balance as well as qualitative aspects and quantitative measures of success [15]. A striking feature is that BSC focuses not only on results, but also on the human issues that produce results in order to ensure better performance over more distant horizons.

When compared to other models, BSC has a well-defined relationship between its dimensions in a cause-and-effect relationship, as well as showing flexibility in defining the number of perspectives. For this reason, the Balanced Scorecard was the model chosen and adapted by this study. It is important to keep in mind that the BSC applied to International Cooperation Agreements focuses on the benefits such cooperation will bring to society, and thus society's satisfaction is the main objective of performance measurement. In addition, the model proposed and adapted from the Balanced Scorecard should verify whether actions taken during the project's term are meeting the goals set by the project and whether the public resources allocated to it are being used optimally.

The BSC in its original model identifies and relates four dimensions (Financial, Clients, Internal Processes and organizational capacity) as illustrated in Figure 2. However, as previously mentioned, the original model does not fit the context of cooperation agreements signed under the public institutions, where profit is not the main purpose of their actions. That is why this study adapted the model created by Kaplan and Norton (see Figure 2), the cause-effect relationship of the proposed model then has six dimensions (sustainability, outcome / products, stakeholders, internal processes, organizational and financial capacity). The following will describe the perspectives of the model that was adapted from the Balanced Scorecard.

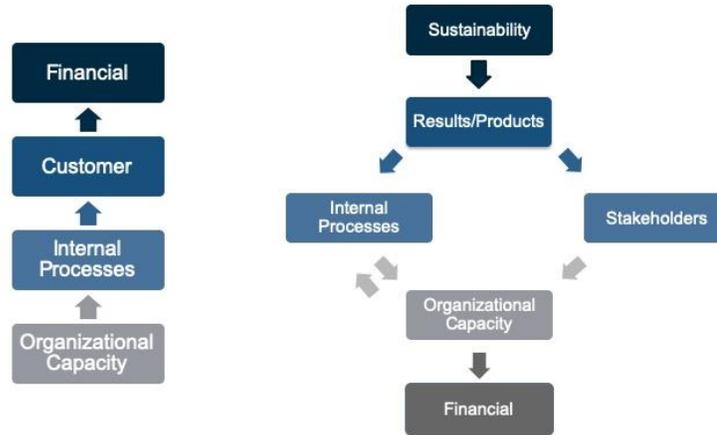


Figure 2 Original BSC x Adaptation of BSC to the context of International Cooperation Agreements

### 3.1 Sustainability

The Sustainability Perspective is at the top of the BSC's adapted structure for the International Technical Cooperation Agreements. It contains the expected impacts, benefits and outputs in terms of socio-economic contribution from all resources and efforts allocated to ACTI. Moreover, in this same perspective is contemplated the sustainability of the project where through its indicators. It is possible to verify what extent the benefits generated that will last at the end of the agreement or project. An example of this would be the Project "SífilisNão!" which aims to reduce acquired syphilis, gestational syphilis and congenital syphilis in Brazil, this perspective of the project is anchored to the objectives of the Strategic Actions Agenda for Syphilis Reduction in Brazil and the Sustainable Development Goals established by Agenda 2030 related to international cooperation actions under Syphilis.

### 3.2 Results/Products

The results / products dimension say a lot about the effectiveness of the other dimensions, because if we had a well-trained team, generating a strategic work plan, with well-executed internal processes, then we would have satisfactory results. Therefore, this dimension is focused on deliberate goals. But not only them, this dimension can and should capture intangible results, both for the target audience of cooperation, and for groups that strategically stay on the sidelines, but benefit from the results obtained. Suggested indicators for this perspective can be divided into educational indicators (exchange students, scientific articles, books, book chapters, jointly produced master's and doctoral dissertations, etc.) and scientific technical indicators (technical visits received and received, events held, patented products, software registrations, technical reports produced, etc.).

### 3.3 Internal Process

At BSC internal processes are the means by which customer value is created. Thus, the adaptation of this perspective within the scope of international technical cooperation projects corresponds to the identification of the processes necessary to achieve the socioeconomic results expected by this cooperation. However, it is not enough to achieve only the results, it is necessary to achieve them efficiently. In this sense, it is necessary to be aware of the internal processes and to verify if they are aligned with the general objective of cooperation and continuously improve them. To correctly identify the indicators from this perspective is necessary to keep in mind which aspects should be most effective in driving the results from the social perspective.

### 3.4 Stakeholders

The stakeholder perspective represents all stakeholders in an International Technical Cooperation Agreement, this perspective does not exist in the original model created by Norton and Kaplan, however it was proposed by this study given that the relationship between stakeholders is a crucial point for the success of an International Technical Cooperation Agreement. Freeman (1984) defined stakeholders as any individual, group of individuals, or other organization that has the ability to interfere or interfere with the activities of a particular organization. However, it is necessary that all stakeholders, as defined by Freeman (1984), are aligned with the overall objective of the agreement between the parties and based on this fact that the indicators should be defined, considering the context and reality of the cooperation[16].

### 3.5 Organizational Capacity

Kaplan and Norton state learning and growth perspective are where employees are inserted and the improvement of internal management through the use of information technology resources and the improvement of management practices. Therefore, for BSC this is a key perspective for achieving the results expected by the institution. Similarly, in the proposed model, this perspective was maintained considering that through it capacities are built and consequently the internal processes are improved. For Neely (2005), capabilities represent the combination of people, practices, technology and infrastructure that together enable the execution of business processes of the organization. In this sense, the learning and growth perspective are directly related to the internal processes of capacity and skills development of the team that deals directly with international cooperation activities. A more capable team and aligned with the ultimate objective of the Cooperation Agreement will be more likely to effectively achieving the expected results proposed in the project.

From this perspective, a critical success point in cooperation processes is recognized: the need to have a well-prepared workplan architecture team. A technical cooperation project will only be successful if there is a high skilled team with sufficient expertise to set well-defined goals, analyze risks and prioritize steps. Thus, controlling this perspective is of great value for managing the performance measurement of cooperation projects. It is important to note that in this perspective not only includes the technical capacity of the team, but also the structure of the workplace and the means of obtaining information that facilitate effectiveness, making it possible that a potential team without the proper infrastructure is no use. for your work. Success in managing team capacity, building work plans, provides insights into the other perspectives in a ripple effect. It is important that the indicators in this perspective take into account the number of people trained to draft and analyze international technical cooperation agreements by total staff, the length of staff experience, clarity in the definition of roles and responsibilities of the team and etc. [12] [13] [14].

### 3.6 Financial

In the Balanced Scorecard the financial perspective is at the top of the cause and effect model created by Kaplan and Norton (1997), showing that all previous perspectives are necessary steps to reach the ultimate goal of private organizations, namely profit. In adapting the BSC for this study, this perspective was called budget, and instead of continuing at the top of the model, it was allocated at the base of the proposed model. This change is justified by the fact that projects and International Cooperation Agreements executed within the scope of public institutions which do not have as their primary objective the profit. The budget perspective is the means by which the activities and goals proposed in the work plans established can be operationalized. International Cooperation Agreements and therefore forms the basis of the adapted BSC. Osorio (2003), in turn, argues that the budget is a limiting reason for public actions and if poorly executed compromises the execution and development of activities. On the other hand, if well managed this perspective positively impacts the other perspectives. Indicators for this perspective should be aligned with the value that will be allocated to the goals of the international actions to be developed in terms of the results to be achieved [12] [17].

## IV. METHODS

This study contemplated a theoretical research with the purpose of reaching a broader understanding of the theme and the object of research. The contents verified and studied came from books, scientific articles, theses, dissertations, official government documents, contents available in electronic media, manuals of the Brazilian Cooperation Agency (ABC), technical reports of the World Health Organization (WHO), Organization Pan American Health (PAHO). Also used as sources were documents produced by the researchers of the Laboratory of Technological Innovation in Health (LAIS), from materials for the preparation of cooperation missions, to travel reports and other materials such as memory aids and other documents related to the schedules completed. The subjects covered in this phase were: International Technical Cooperation, Health Technical Cooperation, performance measurement system, project focused indicators. Data were examined in light of public policy analysis concepts. All the content analyzed in the elaboration phase of the theoretical foundation was used for knowledge construction in the research area and elaboration of the proposed performance system model.

## V. RESULTS AND DISCUSSIONS

Technical cooperation is a valuable tool to help develop, build capacity and overcome global health challenges, such as syphilis. Although the proposed performance measurement model is an attempt to help fill the knowledge gaps on how to make international technical cooperation work better. It is necessary to further evaluate which indicators would be appropriate to monitor and evaluate these actions and to ensure that they are carried out as effectively as possible. It is critical that more organizations, such as LAIS, develop and foster strategies for measuring performance and evaluating international cooperation as a strategy to contribute to the achievement of global health and other Sustainable Development Goals.

As a contribution to this study, the following questions are suggestions for thinking about evaluating international technical cooperation in terms of benefits to society and other actors in cooperation: (a) the project proposal is aligned with national priorities, plans and / or strategies. partner country and the Sustainable Development Goals?; (b) were the capacity gaps and potential capabilities of both countries jointly identified (considering the individual, organizational and interinstitutional dimensions of both countries)?; (c) Has a knowledge management strategy been developed to ensure the accessibility, adaptation, applicability and appropriation of capacities of actors involved in cooperation?; (d) Was the knowledge, skills, competencies, practices and innovations applied during the cooperation by the individuals and organizations involved?; (e) Have the capacities of the countries involved prior to the project been effectively harnessed and shared during the implementation of the cooperation?; (f) Has the project contributed to the strengthening of public policies or programs that fostered cooperation? and (g) What extent have the objectives and outcomes sought and achieved by the project reflected and met the needs and priorities of partners and stakeholders from their own perspective?

## VI. CONCLUSION

The research presented an adapted Balanced Scorecard model for international cooperation actions developed by the Laboratory of Technological Innovation in Health with the objective of contributing to the main goal of the "SífilisNão!" Project, which is to reduce the syphilis rates presented in recent years. This perspective-based model is a starting point for the creation of indicators that are adjustable to the reality of cooperation developed by different institutions, but it is still a challenge to bring a quantitative look at the qualitative assessment of international cooperation so that they can be reliable subsidies for monitoring, evaluation and decision-making. The international cooperation actions developed by LAIS and presented in this study show that there is significant progress in contributing to a higher education institution, as this part contributes to the native dialogue and internationally on health policies. International partnerships multiply the possibility of impacting the reality of the countries involved and their effects begin to reflect in the qualification of the workforce, diagnosis and induction of public policies. It is also noted that synergies between the various areas of knowledge (medicine, law, engineering, international relations, etc.) of research and development institutions strengthen and facilitate the training of young people who will work in the field of Global Health. The more in tune you are and the more aligned you are with the principles of international cooperation, the greater the chances of a successful partnership and the greater the chance of ensuring that we are not leaving anyone behind.

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