

# Policy coherence in the implementation of the 2030 agenda for sustainable development: the Brazilian School Feeding Programme Case Study\*

## Análise de coerência entre políticas públicas e a implementação da agenda 2030 para o desenvolvimento sustentável: Estudo de caso do Programa Nacional de Alimentação Escolar no Brasil

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### ABSTRACT

**Objective:** To analyze the coherence between the 2030 Agenda and the legal framework of the Brazilian National School Feeding Programme (PNAE) at the federal level. **Methodology:** This applied research adopted qualitative, descriptive and documental approaches and used, as conceptual base, The Policy Coherence for Sustainable Development (PCSD) Framework, proposed by OECD (2016). The author developed a procedure to quantify the coherence between the Sustainable Development Goals (SDGs) and the PNAE. **Conclusions:** In the legal framework, 162 coherence links were identified in 37 targets (21.8%) of 13 SDGs (76.4%). SDGs that presented the greatest coherence, according to the criteria used and in descending order were: SDG 2, SDG 4, SDG 3, SDG 1, SDG 10, SDG 16, SDG 12, SDG 15 and SDG 17. SDG 5 (gender equality) presented the weakest intensity of coherence. In-depth analysis of SDG 1 (no poverty) showed that the coherence intensity of the PNAE's legal framework with this Goal derives, to a great extent, from its integration with the Food Acquisition Programme (PAA). A possible way to increase the coherence intensity between SDG 1 and the PNAE's legal framework would be to incorporate into this programme, aspects exclusively present in the design of the PAA. Regarding the SDG 2 (zero hunger), a way to increase the coherence intensity between this Goal and the PNAE's legal framework would be to increment the minimum purchase value of smallholder farming beyond thirty percent.

**Keywords:** PNAE; School feeding; Sustainable Development Goals; Agenda 2030; International cooperation for development.

### RESUMO

**Objetivo:** Realizar análise de coerência entre a Agenda 2030 para o Desenvolvimento Sustentável das Nações Unidas e o arcabouço legal do Programa Nacional de Alimentação Escolar (PNAE) a nível federal. **Metodolo-**

\* Recebido em: 22/02/2019  
Aprovado em: 26/02/2019

□ In November 2016, the World Food Programme Centre of Excellence against Hunger in Brazil (WFP CoE) completed five years of existence. Since its foundation, the Centre of Excellence has been working to build countries' capacities to fight hunger and malnutrition through South-South and Triangular Cooperation, further contributing to achieve the Sustainable Development Goals (SDGs). In order to celebrate its anniversary, the WFP CoE, in partnership with the University Centre of Brasilia (UniCEUB), launched a contest for researchers working with food and nutrition security (FNS) and related areas. This paper came fourth in the anniversary contest. It was considered a valuable contribution to research in FNS and to WFP's purpose of achieving Zero Hunger worldwide.

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**gia:** Trata-se de pesquisa qualitativa, aplicada, descritiva e documental que utilizou como base metodológica o *The Policy Coherence for Sustainable Development (PCSD) Framework* proposto pela Organização para a Cooperação e Desenvolvimento Econômico (OECD). Por se tratar de estudo piloto, foram desenvolvidas ferramentas para análise dos pontos de coerência entre os Objetivos do Desenvolvimento Sustentável (ODS) e o PNAE. **Conclusões:** Foram identificados no arcabouço legal do PNAE 162 pontos de coerência (*coherence links*) com a Agenda 2030, distribuídos em 37 metas (21,8%) e em 13 ODS (76,4%). Os ODS que apresentaram maior intensidade de coerência, segundo os critérios utilizados e em ordem decrescente foram: ODS 2, ODS 4, ODS 3, ODS 1, ODS 10, ODS 16, ODS 12, ODS 15 e ODS 17. O ODS 5 (igualdade de gênero) apresentou a menor intensidade de coerência. Análise aprofundada do ODS 1 (erradicação da pobreza) permitiu verificar que a intensidade da coerência entre este e o arcabouço legal do PNAE deriva, em grande medida, de sua integração com o Programa de Aquisição de Alimentos (PAA). Uma possível forma de aumentar a intensidade da coerência entre o ODS 1 e o arcabouço legal do PNAE seria incorporar a este programa aspectos até então presentes exclusivamente no PAA. No que diz respeito ao ODS 2 (fome zero e agricultura sustentável), uma forma de aumentar a intensidade de coerência entre este e o arcabouço legal do PNAE seria por meio do aumento do percentual mínimo de 30% para compras da agricultura familiar.

**Palavras-chave:** PNAE; Alimentação Escolar; Objetivos do Desenvolvimento Sustentável; Agenda 2030; Cooperação internacional para o desenvolvimento.

## 1. INTRODUCTION

Due to the positive results of adopting the agenda of the Millennium Development Goals (MDGs) and the need to work on the goals not yet achieved, the United Nations has developed a new transnational effort: the 2030 Agenda, which presents the Sustainable Development Goals (SDGs) and runs from 2015 to 2030.<sup>1</sup> The vision of the 2030 Agenda differs from that of the MDGs in important ways, representing a more ambi-

tious challenge that prioritizes the well-being, prosperity and sustainability in all countries for all people of this generation and those to come.<sup>2</sup> There are 17 SDGs and 169 targets established by the 2030 Agenda. They are integrated, indivisible and entail economic, social and environmental dimensions of the sustainable development.<sup>3</sup>

The first Sustainable Development Goals Report (2016) was recently published and describes the current world situation of each of the 17 goals. The Report concluded that the benefits of development are not equally shared by all and reaffirmed the commitment of leaving no one behind.<sup>4</sup> The World Food Programme (WFP) responded to this call by realigning the objectives in its 2017-2021 Strategic Plan in order to contribute to achieving the SDGs in a more integrated and efficient manner and with a commitment to reaching those in greatest need first.<sup>5</sup>

The two strategic objectives set out in the WFP Strategic Plan are related to two SDGs: support countries to achieve zero hunger (SDG 2) and partner to support the implementation of SDGs (SDG 17). In addition, the various Strategic Objectives and Results contribute to the achievement of other SDGs,<sup>6</sup> such as Strategic Result 6, which addresses the importance of public policy coherence for sustainable development.

In Brazil, the World Food Programme Centre of Excellence against Hunger (WFP CoE) conducts several actions that support the WFP's two strategic objectives. In order to put forward the first strategic objective – “support countries to achieve zero hunger (SDG 2)”, the WFP CoE offers technical assistance for the development of programmes of school feeding, social protection and food and nutritional security, as well as programmes to stimulate smallholder farmers and encourage local food supply chains. To support the other

2 OECD, The Organisation For Economic Co-Operation And Development. Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence. Paris: **OECD Publishing**, 2016.

3 UNITED NATIONS, General Assembly. Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015.

4 UNITED NATIONS. The Sustainable Development Goals Report 2016. New York, 2016.

5 WFP, World Food Programme Executive Board. WFP Strategic Plan (2017–2021), Rome, 14–18 November 2016.

6 WFP, World Food Programme Executive Board. WFP Strategic Plan (2017–2021), Rome, 14–18 November 2016.

1 SACHS, J.D. From millennium development goals to sustainable development goals. *Lancet*. 9;379(9832):2206-11, 2012.

strategic objective – “partner to support implementation of the SDGs” (SDG 17) – WFP CoE promotes actions to build national frameworks on issues related to the topic of fighting hunger and promotes international and regional advocacy.<sup>7</sup>

Brazil was chosen as the headquarters for the WFP CoE in 2011, given the country’s success in actions to fight hunger and extreme poverty.<sup>8</sup> The country has surpassed the target of the Millennium Development Goals (MDGs) of halving hunger and extreme poverty from the 1990 base year, 13 years before the deadline.<sup>9</sup> In addition, in 2014, Brazil was considered for the first time to be out of the Hunger Map of the United Nations.<sup>10</sup>

Initiatives such as the Brazil Without Poverty Plan<sup>11</sup> and the Zero Hunger Strategy<sup>12</sup> were essential to the results obtained, and the National School Feeding Programme (PNAE) made a significant contribution to the success of these initiatives, mainly due to its design, which favored access to food, income generation and productive inclusion. As Brazil has one of the largest structured demand programmes in the world, many lessons can be learned from the country’s experience with the PNAE, especially when analyzed in an integrated manner with the Food Acquisition Programme (PAA).<sup>13</sup> The PNAE links school feeding to the purchase of food produced by smallholder farmers, a strategy that has been proved effective in fighting rural poverty and increasing food and nutritional security for programme beneficiaries and for smallholder farmers.<sup>14</sup>

The PNAE has been responsible for the international recognition of the Brazilian success in fighting malnutrition and poverty in an integrated and sustainable way.<sup>15</sup> For this reason, PNAE is among the main public policies that are shared by the Brazilian government in partnership with the WFP CoE through South-South cooperation, especially for Latin American and African countries.<sup>16</sup>

It is undeniable that a universal, integrated and transformative agenda is based on policy coherence to ensure a balanced approach between the economic, social and environmental dimensions of sustainable development and require coherent actions at the local, national, regional and global levels.<sup>17</sup> However, despite the national and international relevance of PNAE and the need for coherence analysis between SDGs and public policies (SDG 17.14), there is no academic or institutional work in the researched literature evaluating the coherence between SDGs and PNAE.

For these reasons, this case study main objective was to analyze the coherence between the 2030 Agenda and the legal framework of the PNAE at the federal level. The analysis, conducted in 2017, sought to map how the PNAE’s legal framework relates to the 169 targets and the 17 SDGs presented in the 2030 Agenda. All 162 coherence links found were classified in order to measure the intensity of the coherence. In addition, detailed analysis was conducted focusing on the coherence links that present thematic affinity to Millennium Development Goal 1 – MDG 1 –, that is, SDG 1 and SDG 2. MDG 1 had as its main objective eradicate extreme poverty and hunger.

## 2. METHODOLOGY

To achieve the main objective of the analysis, regarding the coherence between the UN Sustainable Development Goals and Brazil’s National School Feeding Programme (PNAE) legal framework at the federal le-

7 WFP, World Food Programme Executive Board. WFP Strategic Plan (2017–2021), Rome, 14–18 November 2016.

8 SANTARELLI, M. *Cooperação Sul-Sul brasileira: a experiência do Programa Nacional de Alimentação Escolar em Moçambique*. ActionAid Brasil, 2015. 31 p.

9 UNSCN, United Nations Standing Committee On Nutrition. *Country Policy Analysis: Nutrition Impact of Agriculture and Food Systems, Brazil*. Geneva, 2013.

10 FAO; IFAD; WFP, Food and Agriculture Organization of the United Nations / The International Fund for Agricultural Development / World Food Programme. *The State of Food Insecurity in the World 2015. Meeting the 2015 international hunger targets: taking stock of uneven progress*. Rome, FAO: 2015.

11 In Portuguese, “Plano Brasil sem Miséria”.

12 In Portuguese, “Estratégia Fome Zero”.

13 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. *Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE*. Brasília, 2013.

14 WFP, World Food Programme Centre Of Excellence Against Hunger. *Relatório Anual 2015*. Brasília, 2015.

15 THOMPSON, B; AMOROSO, L. *Improving Diets and Nutrition: Food-based Approaches*. Roma: FAO, 2010. 403p.

16 SANTARELLI, M. *Cooperação Sul-Sul brasileira: a experiência do Programa Nacional de Alimentação Escolar em Moçambique*. ActionAid Brasil, 2015. 31 p.

17 OECD, The Organisation For Economic Co-Operation And Development. *Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence*. Paris: **OECD Publishing**, 2016.

vel, this applied research adopted qualitative, descriptive and documental approaches.

The conceptual base used in this research was the document “Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence”. The Policy Coherence for Sustainable Development (PCSD) Framework proposed by the document was chosen because: (a) it is customized for policy coherence analysis based on the SDGs; (b) it is the strongest conceptual framework available at the time of the research; (c) it is flexible and adaptable to diverse national and institutional contexts; and (d) the general guidance it provides is neither prescriptive nor binding.<sup>18</sup> Thus, this framework allows countries to develop their own strategies to improve policy coherence, during the nationalization process of the 2030 Agenda.

The PCSD Framework provides a general guidance and a screening tool (checklist) that enables mapping the SDGs and their targets to: (a) identify and manage critical sectoral interactions between the social, economic and ecological dimensions; (b) ensure consistency of decisions between different levels of governance; (c) consider the effects of policies on the well-being in any given country (“here and now”), for people living in other countries (“elsewhere”), as well as long-term perspective for transformation, and consider the effects of policies on the well-being of future generations (“later”); (d) develop vertical and horizontal coherence analysis; and (e) track progress in policy coherence for sustainable development (SDG target 17.14).

The screening tool proposed by this framework is divided in three thematic sections. Each section has several sub-sections with their respective evaluation items (drawn as questions asked), creating a checklist with approximately 80 items. The three thematic sections are divided as follows:

- a) Analytical framework: Used to conduct analysis to identify the coherence between the SDGs, and between their respective targets; used to analyze coherence between the SDGs and the legal framework of the signatory countries; and for analysis in relation to contextual factors that can impel or hinder the achievement of

the established goals and targets;

- b) Institutional framework: Used to align the existing institutional mechanisms of police coherence to the needs and vision of the 2030 Agenda for Sustainable Development;
- c) Monitoring framework: Used to monitor the key elements of PCSD’s progress, aiming to contribute to national efforts to evaluate and report on the progress of the SDG target 17.14: “enhance policy coherence for sustainable development”.<sup>19</sup>

The section ‘Analytical Framework’ has six subsections: (1) roles of actors; (2) policy inter-linkages; (3) enabling and disabling conditions (contextual factors); (4) sources of finance; (5) trans-boundary; and (6) inter-generational impacts (“here and now”, “elsewhere” and “later”). To analyze the subsection policy-interlinkages for implementing the 2030 Agenda for Sustainable Development (Item 1.2 of the checklist), five complementary levels of coherence are used:

- First level: between the SDGs and national policies;
- Second level: between the 2030 Agenda for Sustainable Development and other international agendas;
- Third level: between economic, social and environmental policies;
- Fourth level: between diverse sources of finance (public, private, international and domestic);
- Fifth level: between actions of multiple actors (governments, international organisations, civil society and the private sector) (OECD, 2015).

Summarizing, the definition of the methodological scope for the research, based on the PCSD Framework, was organized as follows:

1. Analytical Framework (thematic section);
  - 1.2 Policy-interlinkages (thematic subsection); and
    - 1.2.1 Coherence between the SDGs and national policies (First level).

18 OECD, The Organisation For Economic Co-Operation And Development. Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence. Paris: **OECD Publishing**, 2016.

19 OECD, The Organisation For Economic Co-Operation And Development. Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence. Paris: **OECD Publishing**, 2016.



As the literature still lacks specific tools to quantify the coherence between the SDGs and national policies, it was necessary to develop a procedure for this purpose. The flexibility provided by the PCSD Framework allowed this research to innovate and create a customized procedure for analysis of coherence between the SDGs nationalized to the Brazilian context and the PNAE.

The analysis is based on the concept of ‘coherence link’. The methodology considers a ‘coherence link’ the match, at a more granular level, between each of the 169 targets and any normative section of the legal framework. In addition, the sections were identified in their most specific form, that is, in situations where there was an option of defining the reference point with an article or with an item that was part of the article, the latter option was chosen.

It is important to stress that there are considerable variations of legal technique employed to designate a specific legal section.

The procedure developed for coherence analysis was divided into four broad stages:

1. First stage: Literature review;
2. Second stage: mapping of the ‘coherence links’ between SDGs and the legal framework of PNAE;
3. Third stage: quantification of the intensity of coherence by target, SDG and in general;
4. Fourth stage: detailed analysis focusing the coherence links that present thematic affinity to MDG 1 (SDG 1 and SDG 2).

#### **1. First stage:** Literature review

1.1. The study searched and systematized references related to the policies, programmes and legal framework on school feeding in Brazil; on the SDGs; and on coherence in public policies for sustainable development.

1.2. The literature review focused on articles from scientific journals from the last 15 years (2002-2017) as well as from books and official reports and documents from government, government related agencies and international organizations.

1.3. A reverse search was performed to identify original studies published and not located in the reference lists of the selected articles.

1.4. The study searched publications in Portuguese

and in English available on CAPES (Coordination for the Improvement of Higher Education Personnel) platform of journals, as well as on Google Scholar. Boolean operators (AND, OR) and graphic signals (quotation marks and parentheses) were used to search the defined descriptors. Descriptors and common terms in the literature were chosen to guide the search of **scientific** articles.

**2. Second stage:** mapping of the coherence links between SDGs and PNAE’s legal framework:

2.1 The mapping was done in a granular level for both sides of the coherence link. In the SDG side, target level was used; in the legal framework side, the normative level of excerpts (articles, paragraphs, subparagraph, item) was used.

2.2 MaxQDA qualitative data analysis software (version 12.2.1) was used. The 39 official documents selected in the literature review were imported into the software. These documents were segmented into folders according to type: Laws, Decrees, Ordinances, Resolutions, Instructions, Technical Notes, among others. The “extended lexical search” function was used for semiautomatic identification of the related SDG words. The terms used in the search were extracted from each of the 169 targets. Search strings were used together to optimize searches.

2.3 Of the documents surveyed, the normative sections that presented coherence with the 17 SDGs at the target level were identified. The excerpts were organized in a spreadsheet using Microsoft Excel 2013, to demonstrate the relationship between legal excerpts and targets (‘coherence links’).

**3. Third stage:** quantification of the intensity of coherence by target, SDG and in general

3.1. Each coherence link was classified into three categories developed by the author to estimate the intensity of coherence. The categories are: excerpts from FNDE regulations; excerpts from Laws; and excerpts of general application.

3.1.1. Excerpts from PNAE regulations: those coherence links formed by excerpts present in norms that had the main purpose of regulating PNAE were considered as having a more intense level of coherence (therefore, received a score of 1). In contrast, excerpts that were present in the norms of PNAE legal framework, but that did not have the main purpose of regulating

this programme, received a score of 0 (zero).

3.1.2. Excerpts from Laws: the coherence links formed by excerpts present in Law were considered as having a more intense level of coherence (therefore, they received a score of 1). This choice was because this type of norm (the law) was of a higher hierarchy among the norms used as the basis for analysis (according to the Kelsen Pyramid<sup>20</sup>). On the other hand, those coherence links, for example, composed of excerpts that were present in infra-legal norms (for example, Decree, Ordinance, Resolution, Instruction, Technical Norm) were not classified as excerpts from Laws and received a score of 0);

3.1.3. Excerpts of general application: the coherence links formed by excerpts present in the legal framework of general application were considered as having a more intense level of coherence. This choice was made because the PNAE stipulates that at least 30% of the food purchases for the programme must originate from smallholding farms, so many of the excerpts identified in the legal framework of the programme refer only to that subgroup. Since this part of the norm has got different characteristics and since it cannot be extrapolated for the whole programme, the decision was made in order to differentiate it. The excerpts that referred to the programme as a whole were classified as “excerpts of general application” (therefore, they received a score of 1). Conversely, the excerpts that referred only to the minimum 30% of purchase from the smallholding farm were not classified as such (they received a score of 0).<sup>21</sup>

**4. Fourth stage:** detailed analysis focusing the coherence links that present thematic affinity to MDG 1 (SDG 1 and SDG 2).

4.1. The software MaxQDA (version 12.2.1) was used to identify, among the scientific papers and documents collected in the first stage, the theoretical basis and the justifications for the coherence links identified and measured for the SDGs (numbers 1 and 2), and

their respective related targets (n=11).

4.2. For each of the 37 targets identified in the second stage, the location of the normative sections (articles or paragraphs) in the legal framework was described.

4.3. The quantitative results found in stages two and three were incorporated in the analysis, both of the two SDGs and of the 11 targets analysed in this fourth stage.

4.4. The relationship between each target and the respective normative sections that formed the coherence link were described in detail, incorporating, in cases where it was necessary, the theoretical basis that substantiate the coherence link.

### 3. RESULTS AND DISCUSSION

This section follows the structure presented in the Methodology section, starting from the Second stage.

**Second stage:** mapping of the coherence links between SDGs and PNAE’s legal framework.

This stage of the research aimed to answer mainly two questions: in how many SDGs and in how many targets were there any coherence links? Thus, SDGs and targets were counted in those situations in which at least one coherence link was found, reaching respectively 13 SDGs and 37 targets.

According to the following **Box 1** and **Graph 1**, the analysis at a more aggregated level presents a high proportion of SDGs (76.4% out of a total of 17) where coherence links were present within the federal legal framework of the PNAE. However, in the less aggregated level of the targets, the proportion in which some sort of coherence was present was significantly lower (21.8% of the total of 169).

20 KELSEN, Hans. *Teoria geral do direito e do Estado*. 4.ed. São Paulo: Martins Fontes, 2005.

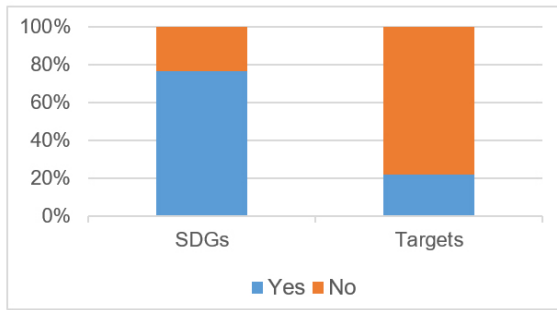
21 The “Excerpts of “general application” classification considered not only the legal framework of the FNDE, but also other regulations related to the PNAE of responsibility of other agencies. Thus, for example, when some PAA regulation mentioned “public call for proposals”, which is the way food purchases are obtained from smallholding farms, the section scored ‘0’ because it belonged to a minimum of 30% and could not be extrapolated.

**Box 1:** Number and percentage of existing coherence links in the group of 17 SDGs and in the group of 169 goals.

Were there any coherence links?				
	SDGs		Targets	
	Number	%	Number	%
<b>Yes</b>	13	76.47%	37	21.89%
<b>No</b>	4	23.53%	132	78.11%
<b>Total</b>	17	100%	169	100%

Source: Elaborated by the author.

**Graph 1:** Percentage of existing coherence links in the group of 17 SDGs and in the group of 169 targets.



Source: Elaborated by the author

**Box 2** shows the total number of SDGs targets and the proportion of these targets in which there is some existing coherence links in relation to the total number of SDG targets. **Graph 2** illustrates this proportion. The five SDGs presenting highest numbers of targets with coherence links (or coherent targets) are: SDG 1 (n=6, 87.7%), SDG 2 (n=5, 62.5%), SDG 4 (n=4, 40%), SDG 12 (n=4, 36.4%) and SDG 15 (n=4, 33.3%).

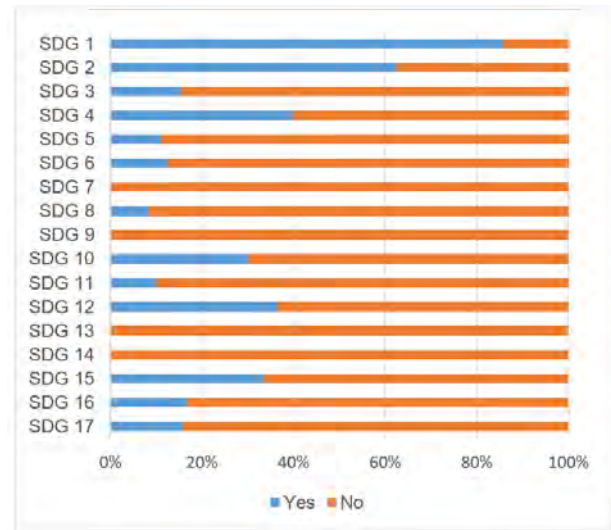
**Box 2:** Total number of targets by SDG, number of targets presenting coherence links, and percentage of targets presenting coherence links for the 17 SDGs (color scale totaled by column).

	Targets		
	Total number of targets by SDG	Existing coherence links	Percentage of existing coherence links by SDG
SDG 1	7	6	85,7%
SDG 2	8	5	62,5%
SDG 3	13	2	15,4%
SDG 4	10	4	40,0%

	Total number of targets by SDG	Targets	
		Existing coherence links	Percentage of existing coherence links by SDG
SDG 5	9	1	11,1%
SDG 6	8	1	12,5%
SDG 7	5	0	0,0%
SDG8	12	1	8,3%
SDG9	8	0	0,0%
SDG 10	10	3	30,0%
SDG 11	10	1	10,0%
SDG 12	11	4	36,4%
SDG 13	5	0	0,0%
SDG 14	10	0	0,0%
SDG 15	12	4	33,3%
SDG 16	12	2	16,7%
SDG 17	19	3	15,8%
<b>TOTAL</b>	<b>169</b>	<b>37</b>	

Source: Elaborated by the author.

**Graph 2:** Percentage of targets presenting coherence links for each of the 17 SDGs.



Source: Elaborated by the author.

**Box 3, Graph 3 and Graph 4** demonstrate the presence and quantity of coherence links by SDG and by target. Coherence links were identified in 13 SDGs (76.47% of 17 SDGs) and in 37 targets (21.89% of 169 Targets). No coherence links were found in the following: SDG 7, SDG 9, SDG 13 and SDG 14.

In total, 162 coherence links were mapped. The SDG with the highest number of coherence links was the SDG 2 (21%, n = 34). The target with the highest number of coherence links was the target 3.4 (9.3%, n = 15).

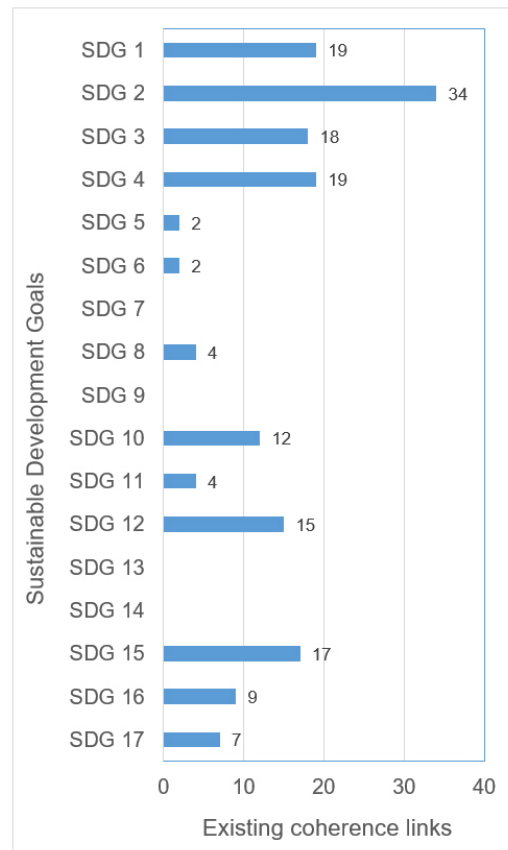
**Box 3:** Presence and quantity of existing coherence links by SDG and by target and their respective relative percentage (color scale totaled by column)

Coherence links							
By Goal				By Target			
Name	Present	Number	%	Name	Number	%	
SDG 1	Yes	19	11,7%	target 1.1	4	2,5%	
				target 1.2	3	1,9%	
				target 1.3	3	1,9%	
				target 1.4	5	3,1%	
				target 1.5	3	1,9%	
				target 1.a	1	0,6%	
SDG 2	Yes	34	21,0%	target 2.1	10	6,2%	
				target 2.2	7	4,3%	
				target 2.3	10	6,2%	
				target 2.4	6	3,7%	
				target 2.5	1	0,6%	
SDG 3	Yes	18	11,1%	target 3.4	15	9,3%	
				target 3.9	3	1,9%	
SDG 4	Yes	19	11,7%	target 4.1	5	3,1%	
				target 4.2	5	3,1%	
				target 4.5	7	4,3%	
				target 4.7	2	1,2%	
SDG 5	Yes	2	1,2%	target 5.a	2	1,2%	
SDG 6	Yes	2	1,2%	target 6.3	2	1,2%	
SDG 7	No						
SDG 8	Yes	4	2,5%	target 8.4	4	2,5%	
SDG 9	No						
SDG 10	Yes	12	7,4%	target 10.1	3	1,9%	
				target 10.2	8	4,9%	
				target 10.4	1	0,6%	
SDG 11	Yes	4	2,5%	target 11.a	4	2,5%	
SDG 12	Yes	15	9,3%	target 12.2	4	2,5%	
				target 12.5	1	0,6%	
				target 12.7	6	3,7%	
				target 12.8	4	2,5%	
SDG 13	No						
		<b>TOTAL</b>	<b>162</b>	<b>100,0%</b>	<b>TOTAL</b>	<b>162</b>	<b>100,0%</b>

Coherence links							
By Goal				By Target			
Name	Present	Number	%	Name	Number	%	
SDG 14	No						
SDG 15	Yes	17	10,5%	target 15.1	1	0,6%	
				target 15.5	5	3,1%	
				target 15.9	6	3,7%	
				target 15.a	5	3,1%	
SDG 16	Yes	9	5,6%	target 16.7	8	4,9%	
				target 16.b	1	0,6%	
SDG 17	Yes	7	4,3%	target 17.6	3	1,9%	
				target 17.9	1	0,6%	
				target 17.16	3	1,9%	
		<b>TOTAL</b>	<b>162</b>	<b>100,0%</b>	<b>TOTAL</b>	<b>162</b>	<b>100,0%</b>

Source: Elaborated by the author.

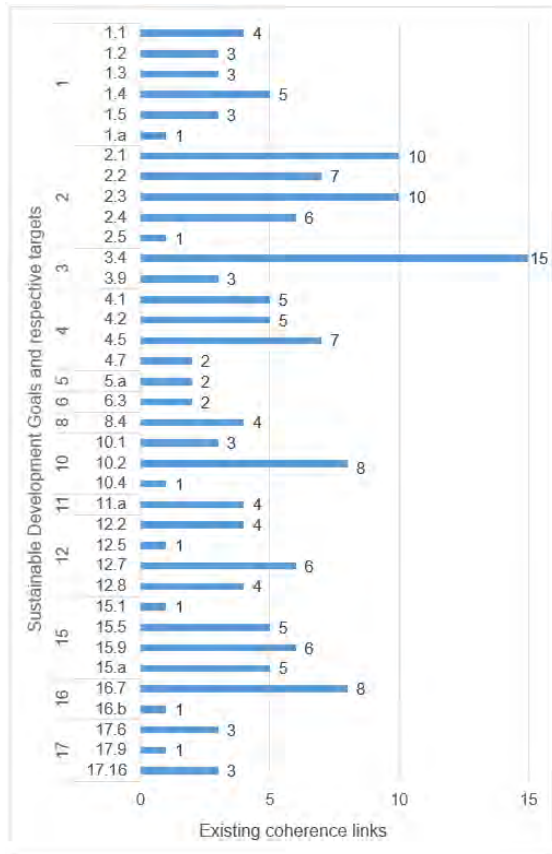
**Graph 3:** Number of coherence links by SDG (for all the 17 SDGs)



Source: Elaborated by the author.



**Graph 4:** Number of coherence links by SDG and by target (only for SDGs and targets where coherence links were present).



Source: Elaborated by the author.

**Third stage:** quantification of the intensity of coherence by target, SDG and in general.

**Box 4, Graph 5 and Graph 6** demonstrate the intensity of coherence by SDG and by target. The analysis estimated that the total coherence was 452 (100%). The SDG with the highest coherence intensity was SDG 2 (21.2%, n = 96). The target with the highest coherence intensity was target 3.4 (10.8%, n = 49).

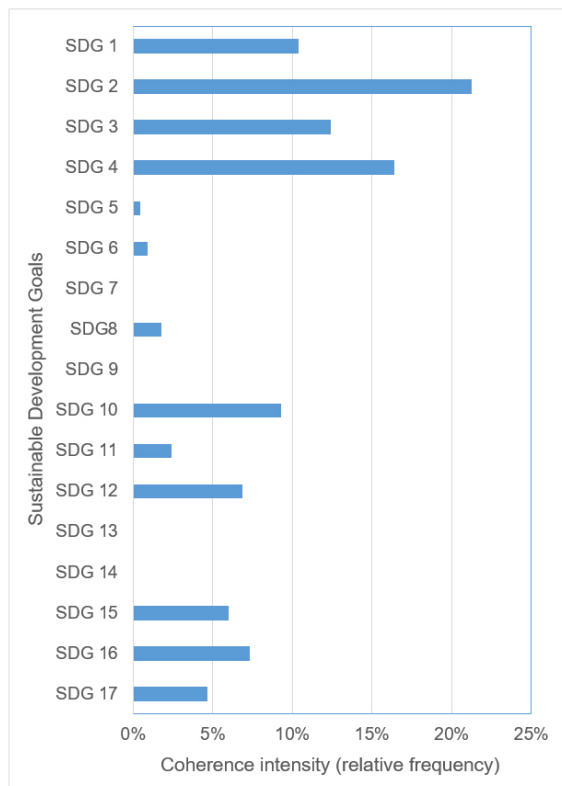
**Box 4:** Intensity of coherence by SDG and by target, in absolute and relative values (color scale totaled by column).

Coherence intensity					
By Goal			By Target		
Name	Number	%	Name	Number	%
SDG 1	47	10,4%	target 1.1	8	1,8%
			target 1.2	7	1,5%
			target 1.3	11	2,4%
			target 1.4	11	2,4%
			target 1.5	7	1,5%
SDG 2	96	21,2%	target 1.a	3	0,7%
			target 2.1	34	7,5%
			target 2.2	28	6,2%
			target 2.3	19	4,2%
			target 2.4	14	3,1%
SDG 3	56	12,4%	target 2.5	1	0,2%
			target 3.4	49	10,8%
SDG 4	74	16,4%	target 3.9	7	1,5%
			target 4.1	20	4,4%
			target 4.2	20	4,4%
			target 4.5	27	6,0%
SDG 5	2	0,4%	target 4.7	7	1,5%
			target 5.a	2	0,4%
SDG 6	4	0,9%	target 6.3	4	0,9%
SDG 7					
SDG 8	8	1,8%	target 8.4	8	1,8%
SDG 9					
SDG 10	42	9,3%	target 10.1	9	2,0%
			target 10.2	29	6,4%
			target 10.4	4	0,9%
SDG 11	11	2,4%	target 11.a	11	2,4%
SDG 12	31	6,9%	target 12.2	8	1,8%
			target 12.5	3	0,7%
			target 12.7	12	2,7%
			target 12.8	8	1,8%
SDG 13					
SDG 14					
SDG 15	27	6,0%	target 15.1	1	0,2%
			target 15.5	9	2,0%
			target 15.9	8	1,8%
			target 15.a	9	2,0%
SDG 16	33	7,3%	target 16.7	30	6,6%
			target 16.b	3	0,7%

Coherence intensity					
By Goal			By Target		
Name	Number	%	Name	Number	%
SDG 17	21	4,6%	target 17.6	9	2,0%
			target 17.9	3	0,7%
			target 17.16	9	2,0%
TOTAL	452	100,0%	TOTAL	452	100,0%

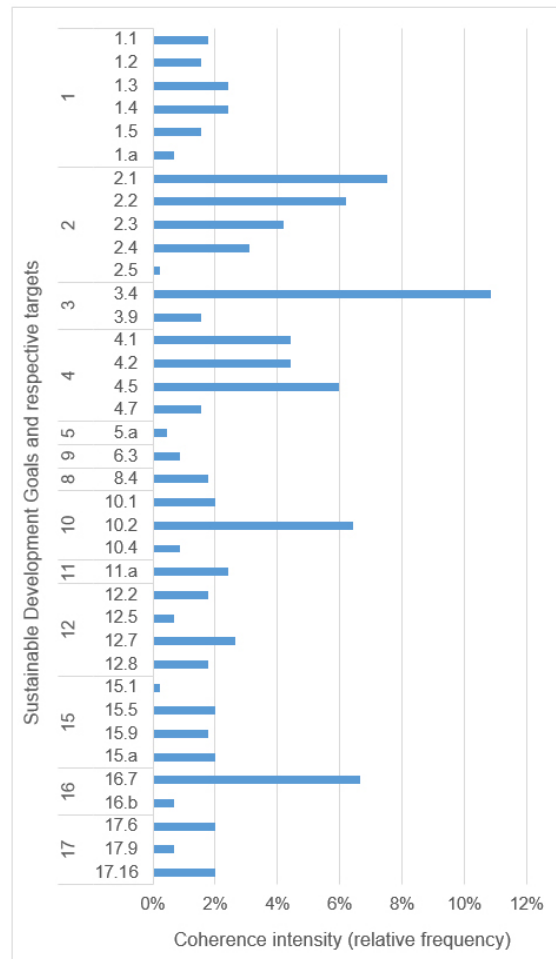
Source: Elaborated by the author.

**Graph 5:** Coherence intensity by SDG, for all the 17 SDGs (relative frequency).



Source: Elaborated by the author.

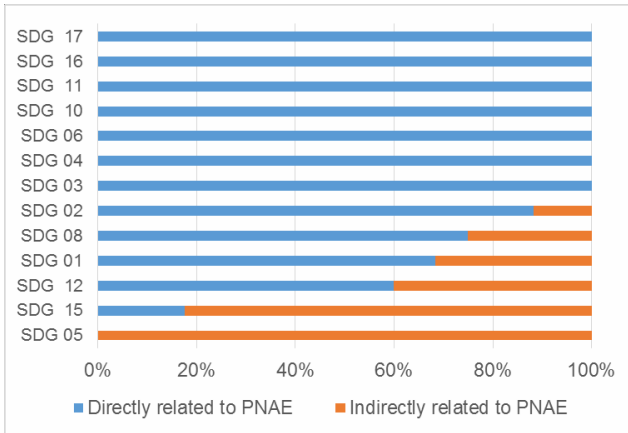
**Graph 6:** Coherence intensity by SDG and by target (relative frequency), only for those SDGs and targets in which coherence links were present.



Source: Elaborated by the author.

The following **Graph 7** presents the percentage of coherence intensity related to the excerpts of PNAE's legal framework divided in two segments: directly related to PNAE and indirectly related to PNAE. This first group is composed of excerpts present in norms that had the main purpose of regulating PNAE. In contrast, the second group is composed of excerpts that were present in the norms of PNAE legal framework, but that did not have the main purpose of regulating this programme.

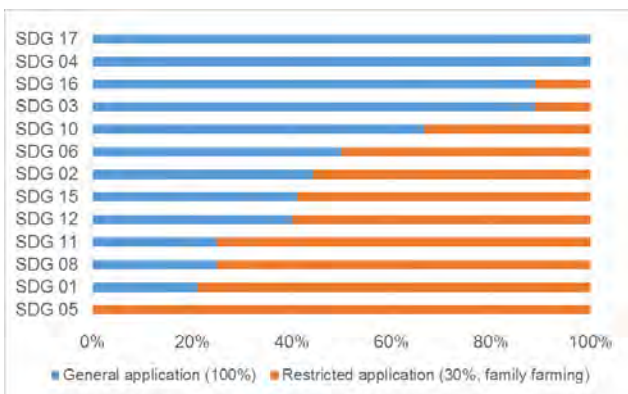
**Graph 7:** Percentage of coherence intensity related to the excerpts of PNAE’s legal framework divided in two segments, directly related to PNAE and indirectly related to PNAE, by SDG.



Source: Elaborated by the author.

The following **Graph 8** presents the percentage of coherence intensity related to the excerpts of PNAE’s legal framework divided in two segments: general application (100%) and family farming only (30%). The PNAE stipulates that at least 30% of the food purchases for the programme must originate from smallholding farms, making many of the excerpts identified in the legal framework of the programme refer only to that subgroup. The excerpts that referred to the programme as a whole were classified as excerpts of general application.

**Graph 8:** Percentage of coherence intensity related to the excerpts of PNAE’s legal framework divided in two segments, general application (100%) and family farming only (30%), by SDG.



Source: Elaborated by the author.

It is important to note that in **Graph 7** and **Graph 8**, SDG 5 (achieve gender equality and empower all women and girls) is the only SDG that is integrally (100%) and simultaneously in the groups of lower intensity of coherence: “indirectly related to PNAE” and “restricted application”. For this reason, the intensity of coherence of the SDG is the weakest.

**Fourth stage:** detailed analysis focusing the coherence links that present thematic affinity to MDG 1 (SDG 1 and SDG 2).

### Analysis of the coherence links: SDG 1

SDG 1 calls for an end to poverty in all its forms everywhere. The United Nations recognizes that eradicating poverty in all its forms and dimensions is the greatest global challenge and an indispensable requirement for sustainable development. Although hundreds of millions of people have left extreme poverty in the past generation,<sup>22</sup> there are still 836 million people living in extreme poverty (UNITED NATIONS, 2017).<sup>23</sup>

Brazil overcame the MDG target related to hunger and extreme poverty, halving the numbers of 1990 at least 13 years earlier than the deadline stated by the UN.<sup>24</sup> Regarding the MDG related to reducing the percentage of poor to one fourth from that of 1990, the country surpassed it seven years before the deadline stated by the UN. WFP documents acknowledge that both extreme poverty and poverty have been significantly reduced in Brazil in recent years.<sup>25</sup> From 2001 to 2011, extreme poverty fell from 10.6% to 6.5% and poverty fell from 25.4% to 13.2% among the general population. With regard to the rural population, extreme poverty fell from 21.0% to 8.4% and poverty fell from 42.6%

22 UNITED NATIONS, General Assembly. Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015.

23 UNITED NATIONS. Sustainable Development Knowledge Platform. SDG 1. Available at: <<https://sustainabledevelopment.un.org/sdg1#>> Last access: 1 april 2017.

24 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

25 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

to 21.8%.<sup>26 27</sup>

The PNAE and the Food Acquisition Programme (PAA) are fundamental tools for understanding the successful experience of Brazil in fighting poverty.<sup>28</sup> The PAA acquires food to store, to regulate prices and to provide food assistance to vulnerable groups. The PNAE focuses on school feeding as a means of promoting food security, keeping students enrolled and performing well at school, as well as expanding the share of smallholder farmers through the stable demand of institutional market.<sup>29</sup>

In 2017, with the budget forecast of R\$ 4.15 billion for school feeding, the obligation imposed on the states and municipalities to acquire at least 30% of food for school feeding from smallholder farmers is expected to generate an institutional market of at least R\$ 1.24 billion in local purchases.<sup>30 31 32</sup>

The two programmes, acting together, are examples of how the inclusion of public procurement in social policies have the potential to generate an increase in farmers' income and promote social inclusion.<sup>33</sup> The incentive to purchase food from smallholder farmers by both programmes is especially relevant in a national context where self-employed individuals are still over-

26 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

27 People in extreme poverty and in poverty are people that live with up to R\$70 (US\$ 18,76\*) and R\$140 (US\$ 37.53\*) per month, according to criteria adopted by the federal government. Brazil applies a different criteria in comparison to the one adopted by the target 1.1, i.e., people who live with less than USD 1.25 per day. \*BACEN/PTAX for the year 2017.

28 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

29 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

30 SANTARELLI, M. Cooperação Sul-Sul brasileira: a experiência do Programa Nacional de Alimentação Escolar em Moçambique. ActionAid Brasil, 2015. 31 p.

31 Respectively US\$1.33 billion\* and US\$ 397 million\*. Exchange rate for the Brazilian Real (R\$) against the American Dollar (US\$). \*BACEN/PTAX for the year 2017.

32 The example from SANTARELLI (2015) was updated with more recent data, based on the budget for the fiscal year of 2017.

33 IFPRI, International Food Policy Research Institute. Global Nutrition Report 2016. From Promise to Impact: Ending Malnutrition by 2030. Washington, DC: 2016.

-represented as poor or extreme poor.<sup>34</sup>

The PNAE is the largest structured demand for smallholder farmers in Brazil<sup>35</sup> and one of the largest in the world (IPC-IG; UNDP, 2013). In 2014, 47% of the PAA suppliers met the criterion of the 'Brazil without Misery Plan', which provided assistance for Brazilians with a monthly income of less than R\$ 70.<sup>36</sup> Among this segment of the population, there were smallholder and family farmers, individual family farmers, land reform settlers, indigenous peoples and *quilombolas* (maroon communities). Rural poverty in Brazil is higher than urban poverty<sup>37</sup> and smallholder and family farmers are 28.3% of the people living in poverty and 11.4% of the people living in extreme poverty in the country.

**Box 5** shows the targets of the SDG 1 that presented coherence with the PNAE's legal framework and the excerpts in which this links are based. Each line of the box corresponds to a coherence link. The structure of each of the three groups (excerpts from PNAE regulations, from Law and of general application) is described in the methodology section.

**Box 5: Coherent targets of SDG 1.**

Target	Description	Excerpts			Legal framework
		from FNDE regulations	from Laws	of general application	
1.1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day	1	1	0	Law 11.947/2009; Art. 2; V
		1	1	0	Law 11.947/2009; Art. 14
		0	0	0	Decree 7.775/2012; Art. 4; II
		0	0	0	Decree 7.775/2012; Art. 46

34 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

35 WFP, World Food Programme Centre Of Excellence Against Hunger. Food and Social Policies Series. Scale of Public Food Procurement in Brazil. Brasília, [no date].

36 OECD; FAO, The Organisation For Economic Co-Operation And Development / Food and Agriculture Organization of the United Nations. Brazilian agriculture: Prospects and challenges. In: OECD/FAO Agricultural Outlook 2015-2024. Paris: **OECD Publishing**, 2015.

37 WFP, World Food Programme Centre Of Excellence Against Hunger. Food and Social Policies Series. Scale of Public Food Procurement in Brazil. Brasília, [no date].



Target	Description	Excerpts			Legal framework
		from FNDE regulations	from Laws	of general application	
1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	1	1	0	Law 11.947/2009; Art. 2; V
		1	1	0	Law 11.947/2009; Art. 14
		0	0	0	Decree 7.775/2012; Art. 8
		0	0	0	Decree 7.775/2012; Art. 46
1.3	Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	1	1	1	Law 11.947/2009; Art. 2; III
		1	1	0	Law 11.947/2009; Art. 2; V
		1	1	1	Law 11.947/2009; Art. 5; § 5; I
1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1	1	0	Law 11.947/2009; Art. 2; V
		1	1	0	Law 11.947/2009; Art. 14
		1	0	1	Resolution CD/FNDE/MEC n° 1/2017; Art. 1
		0	0	0	Decree 7.775/2012; Art. 4; II
1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	1	1	0	Law 11.947/2009; Art. 2; V
		1	1	0	Law 11.947/2009; Art. 14
		0	0	0	Decree 7.775/2012; Art. 8

Target	Description	Excerpts			Legal framework
		from FNDE regulations	from Laws	of general application	
1.a	Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	1	0	1	Technical note DIDAF/COSAN/CGPAE/DIRAE n° 5003/2016; 4.34

Source: Elaborated by the author.

The analysis of the coherence links of target 1.1 suggests that both - the sections of Law 11.947/2009<sup>38</sup> and those of Decree 7.775/2012<sup>39</sup>, aim to prioritize the purchase of food for school feeding from suppliers that are smallholder farmers, indigenous peoples and *quilombola* communities, as well as women. Thus, the regulations favor vulnerable segments of Brazilian population living in poverty or extreme poverty.<sup>40 41 42</sup>

An explicit mention to the establishment of mechanisms aimed to increasing participation of suppliers who are living in extreme poverty in the PAA was identified in article 46 of Decree 7.775/2012.<sup>43</sup> Producti-

38 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

39 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012. Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

40 UNSCN, United Nations Standing Committee On Nutrition. Country Policy Analysis: Nutrition Impact of Agriculture and Food Systems, Brazil. Geneva, 2013.

41 PAULILO, M.I.S. Trabalho familiar: uma categoria esquecida de análise. *Revista Estudos Feministas*, 12(1): 229-252, 2004.

42 COIMBRA JR. C.E.A.; SANTOS, R.V. Health, minorities and inequality: some webs of inter-relations, emphasizing indigenous peoples in Brazil. *Ciênc. saúde coletiva*, 5(1): 125-132, 2000.

43 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012.

ve inclusion was one of the factors that contributed the most to the reduction of extreme poverty in the country,<sup>44</sup> and it is clear the relevance of productive inclusion in the context of target 1.1.

Similarly, for target 1.2, the research identified sections in Law 11.947/2009<sup>45</sup> and Decree 7.775/2012,<sup>46</sup> which mention the priority should be given to groups in vulnerability and poverty when purchasing food for school feeding.

Regarding poverty reduction, Article 8 of Decree 7.775/2012<sup>47</sup> sets out as one of the mechanisms used by the PAA for this purpose to encourage the acquisition of seeds, seedlings and other food crops up to a limit of five percent of the programme's annual budget.

In addition, item I of paragraph 5 of Article 5 of Law 11.947/2009<sup>48</sup> determines that nonprofit organizations or institutions maintained by nonprofits are included in the public served by school meals. Target 1.3, when focusing on the social protection, is coherent with item III of Article 2 of Law 11.947/2009,<sup>49</sup> which determines the universality of the school feeding programme. The PNAE works as a social protection ne-

work<sup>50 51</sup>: it seeks to ensure that all students enrolled in public schools in the country have access to food during the school period without any kind of age, economic or social distinction.

In addition to ensuring students' access to meals while in school, the Programme also has a social protection function for the smallholder and family farmers who sell their products to the PNAE.<sup>52</sup> Among the food suppliers considered as priority, there are segments of poor and vulnerable<sup>53 54</sup> individuals such as family farmers, rural entrepreneurs, indigenous people and *quilombolas*.

The productive inclusion of poor and vulnerable segments of the population is a topic that appears again in the analysis of target 1.4. The sections identified as coherent with target 1.4 in Law 11.947/2009<sup>55</sup> and Decree 7.775/2012<sup>56</sup> relate to the productive inclusion of food suppliers in situations of extreme poverty. To the segments already mentioned, foresters, fish farmers, extractivists and artisanal fishermen are added. Encouraging the production and sale of food from these segments to the PNAE helps to generate income among these populations.<sup>57</sup>

Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

44 WFP, World Food Programme Centre Of Excellence Against Hunger. Relatório Anual 2012. Brasília, 2012.

45 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

46 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012. Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

47 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012. Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

48 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

49 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

50 DRAKE, L.; WOOLNOUGH, A.; BURBANO, C.; BUNDY, D. Global School Feeding Sourcebook: Lessons from 14 Countries. London: Imperial College Press, 2016.

51 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

52 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

53 UNSCN, United Nations Standing Committee On Nutrition. Country Policy Analysis: Nutrition Impact of Agriculture and Food Systems, Brazil. Geneva, 2013.

54 COIMBRA JR. C.E.A.; SANTOS, R.V. Health, minorities and inequality: some webs of inter-relations, emphasizing indigenous peoples in Brazil. *Ciênc. saúde coletiva*, 5(1): 125-132, 2000.

55 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

56 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012. Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

57 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and

In addition to ensuring the rights of all to access economic resources, target 1.4 mentions the right to land and land control, as well as access to technologies. To that extent, Law 11.947<sup>58</sup> is again coherent with this target by citing as one of the priority segments to provide food for the PNAE is the land reform settlers.

In general, the challenges faced by smallholder and family farmers in the course of their productive activities (such as land scarcity, lack of technical assistance and insufficient financial resources) are even greater when it comes to land reform settlements.<sup>59</sup> The economic resources redistributed to this segment through the acquisition of food for the PNAE increase the generation of employment and income, contributing to strengthen the local economy and to increase the resilience of the settlers.<sup>60</sup>

Target 1.4 also mentions the need to guarantee the right of access to basic services. Considering that school education is a basic service and that it depends on school feeding for its proper functioning – as provided for in article 208 of the Brazilian Federal Constitution<sup>61</sup> – the PNAE aims to guarantee access to specific school feeding for groups that are admittedly more vulnerable. As stated in Resolution CD/FNDE/MEC no. 1/2017, there is specific monetary transfer for indigenous and *quilombola* students, based on the recognition of the precarious conditions of health and nutrition of these populations.<sup>62</sup>

Target 1.5 mentions the need to build the resilience of the poor and those in vulnerable situations. As mentioned in previous analyzes, the PNAE seeks to prioritise

segments of society that are in a situation of poverty and vulnerability in the context of food acquisition. The Programme's incentive in this regard helps to build their resilience against shocks and economic disasters. The diversified production of food also facilitates the use of the production for self-consumption in case of environmental and climate-related disasters, reducing their vulnerability to these events.<sup>63</sup> It is known that local production by smallholder farmers allows for a more diverse and resilient food system.<sup>64</sup>

It also contributes to the construction of a more resilient food system with greater food and nutritional security, facilitating the access to seeds by smallholder farmers.<sup>65</sup> As already pointed out for target 1.2, Article 8 of Decree 7.775/2012<sup>66</sup> encourages the acquisition of seeds, seedlings and other food crops by suppliers benefited from the programme, which represents an impact of the PNAE, in coordinated operation with the PAA, on improving agricultural resilience at the local level.

The analysis of target 1.a, when mentioning the need to enhance development cooperation, allowed to identify a coherence link with the Technical Note DIDAF/COSAN/CGPAE/DIRAE n° 5003/2016.<sup>67</sup> In this document, the PNAE is cited as an international reference in technical cooperation between developing countries and its insertion in several projects funded by international organizations, such as the Food and Agriculture Organization (FAO) and the WFP.

In fact, Brazilian cooperation in food and nutrition

PNAE. Brasília, 2013.

58 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

59 SANGALLI, A.R. *et al.* Produção e geração de renda na agricultura familiar: um diagnóstico do assentamento rural Lagoa Grande em Dourados, Mato Grosso do Sul. **Ciência e Natura**, 36(2): 180–192, 2014.

60 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Aquisição de produtos da agricultura familiar para a alimentação escolar: 2ª edição - versão atualizada com a Resolução CD/FNDE n° 04/2015. Brasília: FNDE, 2016a.

61 BRASIL. Constituição (1988). Constituição da República Federativa do Brasil. Brasília, DF: **Senado Federal: Centro Gráfico**, 1988. 292 p.

62 GIORDANI, R.C.F.; GIL, L.P.; AUZANI, S.C.S. Políticas públicas em contextos escolares indígenas: repensando a alimentação escolar. **Espaço Ameríndio**, 4:25-51, 2010.

63 GRISA, C.; SCHNEIDER, S. “Plantar pro gasto”: a importância do autoconsumo entre famílias de agricultores do Rio Grande do Sul. **Rev. Econ. Sociol. Rural**. 46(2): 481- 515, 2008.

64 ROMANELLI, C., *et al.* Connecting global priorities: biodiversity and human health: a state of knowledge review. World Health Organization/Secretariat of the UN Convention on Biological Diversity, 2015.

65 ROMANELLI, C., *et al.* Connecting global priorities: biodiversity and human health: a state of knowledge review. World Health Organization/Secretariat of the UN Convention on Biological Diversity, 2015.

66 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012. Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

67 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Nota Técnica n° 5003/2016/DIDAF/COSAN/CGPAE/DIRAE. Análise do estágio de implementação do artigo 14 da Lei n° 11.947/2009 – aquisição de gêneros alimentícios diretamente da agricultura familiar para o Programa Nacional de Alimentação Escolar (PNAE). Brasília, 2016b.

issues went through a period of rapid expansion between 2003 and 2010.<sup>68</sup> The Zero Hunger Strategy, an initiative of which the PNAE and the PAA are part, began to influence Brazil's cooperation agreements with other developing countries and with multilateral agencies, making food and nutritional security one of the main agendas for South-South cooperation.<sup>69</sup>

### Analysis of the coherence links: SDG 2

SDG 2 aims to end hunger, achieve food security and improve nutrition and promote sustainable agriculture. The UN is determined to end hunger and achieve food security as a matter of priority and to end all forms of malnutrition. The importance of designating resources to supporting smallholder farmers, especially women farmers, particularly in the least developed countries - a priority in the MDGs - is reaffirmed in the 2030 Agenda.<sup>70</sup>

Brazil achieved considerable results regarding the MDG 1 (ending hunger and extreme poverty),<sup>71</sup> including the reduction of wasting up to a quarter of the measure of reference (from 7.1% to 1.8%).<sup>72</sup> In 2014, the country was removed for the first time from the United Nations World Hunger Map. The 2014 State of Food insecurity in the World report highlights the advances Brazil has made in reducing hunger and strengthening food security.<sup>73</sup>

The prevalence of stunting has decreased conside-

rably in the last decades in the country.<sup>74</sup> However, there are segments in greater socioeconomic disadvantage and less visibility in the country that still have high prevalence of stunting, such as indigenous children under 5 years of age whose average prevalence in all regions of the country reaches 25.7%.<sup>75</sup>

Brazil's international recognition in the last decade for its successful initiatives to fight hunger and food insecurity is due to the Zero Hunger Strategy and associated public policies and programmes.<sup>76</sup> Implemented by the Brazilian government in 2003, this strategy is currently recognized as a model by the FAO and the WFP in the fight against hunger and poverty,<sup>77</sup> and is associated with actions of inclusive economic and social development as well as strengthening smallholder and family farming, inclusive rural development, and improving accessibility to food through various social protection measures.<sup>78</sup>

School feeding was a priority as one of the public food and nutrition programmes under the Zero Hunger Strategy, with the objective of guaranteeing access to food and of improving food security indicators, along with educational indicators.<sup>79</sup> Brazil became the first country to integrate the link between school feeding and agricultural production to its regulations and the PNAE is currently the most important food and nutri-

68 SANTARELLI, M. *Cooperação Sul-Sul brasileira: a experiência do Programa Nacional de Alimentação Escolar em Moçambique*. ActionAid Brasil, 2015. 31 p.

69 CUNHA, B. *A projeção internacional da Estratégia Fome Zero*. In: Ministério do Desenvolvimento Social e Combate à Fome. *Fome Zero: Uma história brasileira* - v.3. Brasília: MDS, 2010.

70 UNITED NATIONS, General Assembly. *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015.

71 BRASIL. Secretaria-Geral da Presidência da República Secretaria Nacional de Relações Político-Sociais and United Nations Development Programme (UNDP). *Prêmio Objetivos de Desenvolvimento do Milênio Brasil*. [no date] 80 p.

72 BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Análise de Situação de Saúde. *Saúde Brasil 2009: uma análise da situação de saúde e da agenda nacional e internacional de prioridades em saúde*. Brasília: Ministério da Saúde, 2010. 368 p.

73 HUNTER, D.; ÖZKAN I.; BELTRAME, M.O.D.; SAMARASINGHE, W.L.G.; WASIKE, V.W.; CHARRONDIÈRE, U.R.; BORELLI, T.; SOKOLOW, J. Enabled or Disabled: Is the Environment Right for Using Biodiversity to Improve Nutrition? *Front. Nutr.* 3:14, 2016.

74 BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Análise de Situação de Saúde. *Saúde Brasil 2009: uma análise da situação de saúde e da agenda nacional e internacional de prioridades em saúde*. Brasília: Ministério da Saúde, 2010. 368 p.

75 COIMBRA JR. C.E.A. The First National Survey of Indigenous People's Health and Nutrition in Brazil: rationale, methodology, and overview of results. *BMC Public Health*, 13:52, 2013.

76 HUNTER, D.; ÖZKAN I.; BELTRAME, M.O.D.; SAMARASINGHE, W.L.G.; WASIKE, V.W.; CHARRONDIÈRE, U.R.; BORELLI, T.; SOKOLOW, J. Enabled or Disabled: Is the Environment Right for Using Biodiversity to Improve Nutrition? *Front. Nutr.* 3:14, 2016.

77 FRAUNDORFER, M. *Fome Zero para o Mundo: a difusão global brasileira do Programa Fome Zero*. Austral: *Revista Brasileira de Estratégia e Relações Internacionais*, 2(4): 97-122, 2013.

78 HUNTER, D.; ÖZKAN I.; BELTRAME, M.O.D.; SAMARASINGHE, W.L.G.; WASIKE, V.W.; CHARRONDIÈRE, U.R.; BORELLI, T.; SOKOLOW, J. Enabled or Disabled: Is the Environment Right for Using Biodiversity to Improve Nutrition? *Front. Nutr.* 3:14, 2016.

79 DRAKE, L.; WOOLNOUGH, A.; BURBANO, C.; BUNDY, D. *Global School Feeding Sourcebook: Lessons from 14 Countries*. London: Imperial College Press, 2016.



tional security programme in the country.<sup>80</sup>

According to the Standing Committee on Nutrition of the United Nations,<sup>81</sup> the PNAE fulfills the design of focusing on how to address the types and causes of malnutrition based on the assessment of local contexts. In addition, it was considered the most nutrition-sensitive initiative analyzed<sup>82</sup>, which considers, among other issues, the approach focused on environmental sustainability, promoting increased food production, targeting the most vulnerable groups and expanding market access to the most vulnerable.

**Box 6** presents the targets of SDG 2 (End hunger, achieve food security and improve nutrition and promote sustainable agriculture) that presented in which there was coherence links with the legal framework related to the PNAE. Each line of the box corresponds to a coherence link. The structure of each of the three groups (excerpts from PNAE regulations, from Law and of general application) is described in the methodology.

**Box 6:** Coherent targets of SDG 2.

Target	Description	Excerpts			Legal framework
		from PNAE regulations	from Laws	of general application	
2.1	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	1	1	1	Law 11.947/2009; Art. 2; I
		1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 18
		1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 18; § 1
		1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 18; § 4
		1	1	1	Law 11.947/2009; Art. 2; III
		1	1	1	Law 11.947/2009; Art. 2; VI
		1	1	1	Law 11.947/2009; Art. 3
		1	1	1	Law 11.947/2009; Art. 4
		1	1	1	Law 11.947/2009; Art. 12
2.2	By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	1	1	1	Law 11.947/2009; Art. 2; I
		1	1	1	Law 11.947/2009; Art. 2; III
		1	1	1	Law 11.947/2009; Art. 2; VI
		1	1	1	Law 11.947/2009; Art. 3
		1	1	1	Law 11.947/2009; Art. 4
		1	1	1	Law 11.947/2009; Art. 12
		1	1	1	Law 11.947/2009; Art. 17; I

80 HAWKES, C.; BRAZIL, B.G.; CASTRO, I.R.R.; JAIME, P. C. How to engage across

sectors: lessons from agriculture and nutrition in the Brazilian School Feeding Program. *Rev. Saúde Pública*, 50(47), 2016.

81 UNSCN, United Nations Standing Committee On Nutrition. Country Policy Analysis: Nutrition Impact of Agriculture and Food Systems, Brazil. Geneva, 2013.

82 When compared to the National Food and Nutrition Security Policy (PNSAN); the National Agroecology and Organic Production Policy (PNAPO); the Agriculture and Livestock Plans; the Harvest Plan (Family Farming, Fisheries and Aquaculture), the National Programme for Strengthening of Family Farming (PRONAF) and the Food Acquisition Programme (PAA).

Target	Description	Excerpts			Legal framework
		from PNAE regulations	from Laws	of general application	
2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 18
		1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 18; § 1
		1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 18; § 4
		0	0	0	Decree nº 7.775/2012; Art. 4; II
		0	0	0	Decree nº 7.775/2012; Art. 4; VI; § 3
		0	0	0	Decree nº 7.775/2012; Art. 4; VI; § 5
		1	1	0	Law 11.947/2009; Art. 2; V
		1	1	0	Law 11.947/2009; Art. 14
		1	0	0	Resolution CD/FNDE/MEC 26/2013; Art. 24; §1
		1	0	0	Resolution CD/FNDE/MEC 26/2013; Art. 25
2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	1	1	1	Law 11.947/2009; Art. 2, V
		1	0	0	Resolution CD/FNDE/MEC 26/2013; Art. 24
		1	0	0	Resolution CD/FNDE/MEC 26/2013; Art. 24; §1
		1	0	0	Resolution CD/FNDE/MEC 26/2013; Art. 25
		1	0	0	Resolution CD/FNDE/MEC 26/2013; Art. 13; §1
		1	0	0	Resolution CD/FNDE/MEC 38/2009; Art. 20; II

Target	Description	Excerpts			Legal framework
		from PNAE regulations	from Laws	of general application	
2.5	By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	0	0	0	Decree nº 7.775/2012; Art. 8; § 2

Source: Elaborated by the author.

The analysis of the coherence links of target 2.1 brings one of the principles of the PNAE, the universalization of the service, which means that all students enrolled have the right to have access to safe, nutritious and sufficient food throughout the school year in the period they are in school. To that extent, sections identified in Law 11.947/2009<sup>83</sup> point to coherence with this target, which concerns the access of students to safe, nutritious and sufficient food all year round.

Presenting a coherence link with target 2.1, the beneficiaries of the Programme are individuals in situations of poverty and vulnerability, such as indigenous

83 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

and *quilombola* students.<sup>84 85</sup> The Programme offers specific monetary transfers for school feeding towards these groups of students, as well as meals that provide higher caloric and nutritional values than those offered to other beneficiaries. This strategy is based on data that point to the poorer health and nutrition conditions of these groups when compared to others.<sup>86</sup> In practice, the PNAE benefits mainly students, including children, with greater nutritional and socioeconomic vulnerability.<sup>87</sup>

By allocating at least 30% of the federal resources for the purchase of food from smallholder farmers, according to Resolution CD/FNDE/MEC 38/2009, student feeding tends to become more diverse and healthy.<sup>88</sup> The waiver of a bidding process, as stated in the Resolution, facilitates the inclusion of smallholder and family farmers in the institutional markets of school feeding. It is worthwhile to emphasize that it is a priority to receive proposals from local farmers (as local as possible). This measure helps to increase the income of smallholder farmers<sup>89</sup> by expanding their access to food.<sup>90</sup> In addition, the diversification of their production<sup>91</sup> extends the guarantee of food and nutritional security among the vulnerable populations of these regions.<sup>92</sup>

84 UNSCN, United Nations Standing Committee On Nutrition. Country Policy Analysis: Nutrition Impact of Agriculture and Food Systems, Brazil. Geneva, 2013.

85 COIMBRA JR. C.E.A. The First National Survey of Indigenous People's Health and Nutrition in Brazil: rationale, methodology, and overview of results. **BMC Public Health**, 13:52, 2013.

86 GIORDANI, R.C.F.; GIL, L.P.; AUZANI, S.C.S. Políticas públicas em contextos escolares indígenas: repensando a alimentação escolar. **Espaço Ameríndio**, 4:25-51, 2010.

87 ROCHA, C. Developments in National Policies for Food and Nutrition Security in Brazil. **Development Policy Review**, 27(1): 51-66, 2009.

88 SARAIVA, E.B. *et al.* Panorama of purchasing food products from family farmers for the Brazilian School Nutrition Program. **Ciência & Saúde Coletiva**, 18(4): 927-936, 2013.

89 TOMASETTO, M. Z. C.; LIMA, J. F.; SHIKIDA, P. F. A. Desenvolvimento local e agricultura familiar: o caso da produção de açúcar mascavo em Capanema, Paraná. **Interações**, 10(1): 21-30, 2009.

90 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

91 TOMASETTO, M. Z. C.; LIMA, J. F.; SHIKIDA, P. F. A. Desenvolvimento local e agricultura familiar: o caso da produção de açúcar mascavo em Capanema, Paraná. **Interações**, 10(1): 21-30, 2009.

92 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured

Target 2.2 raises concerns about food and nutritional security of adolescent girls, pregnant and lactating women and the nutritional status of children under 5 years of age. PNAE beneficiaries include individuals from the mentioned groups who are enrolled in the public school system. The professional responsible for developing menus for school feeding, the nutritionist, should consider the biological differences, age, health condition, possible need for specific attention and possible condition of social vulnerability of students served (item I of Article 2 of Law 11.947/2009).<sup>93</sup>

The next three SDG 2 targets that will be analyzed focus on food production. Target 2.3 raises the need to increase agricultural production particularly among the most vulnerable groups. The groups mentioned in this goal, smallholder farmers, indigenous peoples and fishermen, are included as possible suppliers of food for the programme and, as already mentioned, can benefit from the waiver of a bidding process. The participation of women among the beneficiaries of the PAA is also a coherence link for this target (Decree 7755/2012).<sup>94</sup>

It should be emphasized that priority is given to purchasing food from the populations and communities at the most local level possible, according to paragraph 4 of Article 18 of Resolution CD/FNDE/MEC 38/2009.<sup>95</sup> This logic stems from the understanding that local food procurement can facilitate community development and increase food security for vulnerable populations, in addition to increasing income and reducing poverty in rural areas.<sup>96</sup>

Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

93 BRASIL. Fundo Nacional de Desenvolvimento da Educação. Lei n. 11.947, de 16 de junho de 2009. Dispõe sobre o atendimento da alimentação escolar e do Programa Dinheiro Direto na Escola aos alunos da educação básica e dá outras providências. Brasília, 2009a.

94 BRASIL. Casa Civil. Decreto N° 7.775, de 4 de julho de 2012. Regulamenta o art. 19 da Lei no 10.696, de 2 de julho de 2003, que institui o Programa de Aquisição de Alimentos, e o Capítulo III da Lei no 12.512, de 14 de outubro de 2011, e dá outras providências. Brasília, 2012.

95 BRASIL. Ministério da Educação. Fundo Nacional de Desenvolvimento da Educação (FNDE). Resolução CD n° 38 de 19 de julho de 2009. Dispõe sobre o atendimento da alimentação escolar aos alunos da educação básica no Programa Nacional de Alimentação Escolar (PNAE). Diário Oficial da União, 2009b.

96 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

The PNAE, through Article 25 of Resolution CD/FNDE/MEC 26/2013,<sup>97</sup> seeks to encourage the collective organization of smallholder and family farmers in associations and cooperatives and seeks to provide the necessary incentives to improve the quality of their products.<sup>98</sup> To achieve the necessary growth in agriculture, which leads to increased food and nutritional security and poverty reduction in the rural areas, as mentioned in target 2.3, family farmers need the necessary conditions to be included in the development process, such as adequate infrastructure, equitable access to land and stable input and output markets.<sup>99</sup> A study by the WFP<sup>100</sup> indicates that the PNAE and the PAA can have a powerful economic impact on the lives of smallholder farmers.<sup>101</sup>

Target 2.4 focuses on the need to encourage production systems that promote the resilience of agricultural practices and ecosystem improvement. Similarly to target 2.3, the stimulus to organic and agroecological production is one of the coherence links for target 2.4. The agro ecological production has, for example, the principle of maintaining and improving the conditions of quality of the soil, which is an element mentioned in this target.<sup>102</sup>

In contrast, the predominant industrial agricultural model in Brazil is associated with degradation of biodiversity, soils, water resources and cultures of traditional peoples. This model also generates food insecurity in

thousands of rural families in the country.<sup>103</sup> For this reason, it is important that public programmes such as the PNAE have as one of their priorities the purchase of food from socially just agri-food systems that help to maintain ecosystems, such as agroecology.

According to the PNAE regulations, organic and agro ecological production are some of the priorities to be considered in the acquisition of food from smallholder and family farmers. The main way the PNAE supports agroecology currently is through the economic mechanism of providing a market with a guaranteed premium price.<sup>104</sup>

Still regarding target 2.4, the PNAE seeks to stimulate the acquisition of socio- biodiversity products, as stated in the first paragraph of Article 13 of Resolution CD/FNDE/MEC no 26/2013.<sup>105</sup> The generation of socio-biodiversity products involves, in addition to the biodiversity preservation component, the participation of indigenous communities, *quilombolas*, extractivists and other traditional communities in the process. This stimulus is relevant because official statistics point to the low visibility and small footprint of socio-biodiversity products in the formal economy today.<sup>106</sup>

In the context of biodiversity protection, target 2.5 points to the need to promote access to a fair and an equitable sharing of benefits arising from the use of genetic resources and associated traditional knowledge. In the analysis of this target, it was identified an extract from the PAA regulation that deals with the acquisition of seeds of local, traditional or native cultivar by the beneficiaries supplying to the Programme.

97 BRASIL. Fundo Nacional de Desenvolvimento da Educação (FNDE). Resolução nº 26, de 17 de junho de 2013. Dispõe sobre o atendimento da alimentação escolar aos alunos da educação básica no âmbito do Programa Nacional de Alimentação Escolar - PNAE. Brasília, 2013.

98 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

99 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

100 WFP, World Food Programme Centre Of Excellence Against Hunger. Food and Social Policies Series. Scale of Public Food Procurement in Brazil. Brasília, [no date].

101 IPC-IG; UNDP, International Policy Centre for Inclusive Growth / United Nations Development Programme. Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE. Brasília, 2013.

102 GUERRA, J. Pathways to Agroecology: mediated markets and credit access in Santa Catarina, Brazil [master thesis]. Vancouver: **The University of British Columbia**, 2016.

103 ALTIERI, M.A.; FUNES-MONZOTE, F.R.; PETERSEN, P. Agroecologically efficient agricultural systems for smallholder farmers: contributions to food sovereignty. **Agron. Sustain. Dev.** 32:1-13, 2012.

104 ALTIERI, M.A.; FUNES-MONZOTE, F.R.; PETERSEN, P. Agroecologically efficient agricultural systems for smallholder farmers: contributions to food sovereignty. **Agron. Sustain. Dev.** 32:1-13, 2012.

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106 BRASIL. Grupo de Coordenação Ministério do Desenvolvimento Agrário, Ministério do Meio Ambiente e Ministério do Desenvolvimento Social e Combate à Fome. Plano Nacional de Promoção das Cadeias de Produtos da Sociobiodiversidade. Brasília, 2009c.



### 3. DIRECTIONS FOR FUTURE RESEARCH

Future studies evaluating the coherence between SDGs and public policies in the field of school feeding should be developed to expand the depth, the scope and the diversity of the coherence analysis initiated by this research.

Regarding the depth, it is suggested continuous work in the qualification of the coherence (step 4 of the methodology presented here) of the SDGs and their respective targets that were not analyzed in this research. It is also suggested that, if possible, this development should be prioritized according to the intensity of the coherence found in this research, namely: SDG 4, SDG 3, SDG 10, SDG 16, SDG 12, SDG 15 and SDG 17. In addition, the complementation of the studies with the PNAE's legal framework at the state and municipal level would bring a better degree of geographic specificity to the analysis.

Concerning the scope, it is suggested that future analysis use the Policy Coherence for Sustainable Development Framework<sup>107</sup> screening tool (checklist) in a more comprehensive way. For example, surveys that include the other five subsections of the analytical framework in the coherence assessment and that include the other four complementary policy-interlinkages levels of coherence. In addition, it would be of great value coherence analyses that incorporate also the institutional and/or the monitoring framework.

About diversity, at the national level, it is suggested the conduction of analysis focused on policies at the federal level that have high interaction (synergy or trade-off) with the PNAE. At the international level, future research should carry out analysis of coherence between SDGs and school feeding policies in other countries, especially those inspired by the Brazilian model.

Finally, it is suggested that future works focus on the development of instruments, scales and metrics for the quantitative evaluation of coherence between SDGs and public policies.

107 OECD, The Organisation For Economic Co-Operation And Development. *Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence*. Paris: **OECD Publishing**, 2016.

### 4. RESEARCH LIMITATIONS

#### 4.1. Construct Validity

The research did not find in the literature reliable and valid measurement instruments to guide the choice of variables, scales and for the statistical analysis of coherence intensity between SDGs and public policies. The instruments developed by the author did not go through validation criteria such as those presented by Bagozzi.<sup>108</sup> Therefore, there may be inconsistency between the measures employed and the constructs that they purport to represent.

#### 4.2. External Validity

The pilot instruments developed by the author may lack External Validity because they were not submitted to the traditional process of validation criteria for the development of instruments and tools of measurement in scientific research. Therefore, the results derived could not be generalized across time, settings, and other policies.

### 5. CONCLUSIONS

This research carried out a coherence analysis between the objectives and targets of the 2030 Agenda for Sustainable Development and the federal legal framework of the National School Feeding Programme (PNAE). In the legal framework, 162 coherence points were identified in 37 targets (21.8% of the 169 targets) of 13 SDGs (76.4% of the 17 SDGs).

SDGs that presented the greatest coherence, according to the criteria adopted, and in descending order were: SDG 2 (zero hunger), SDG 4 (quality education), SDG 3 (good health and well-being), SDG 1 (no poverty), SDG 10 (reduced inequalities), SDG 16 (peace, justice and strong institutions), SDG 12 (responsible consumption and production), SDG 15 (life on land) and SDG 17 (partnerships for the goals). Among those SDGs that presented some level of coherence, the

108 BAGOZZI, R. P.; PHILLIPS, Y. Y. L. W. Assessing Construct Validity in Organizational Research. *Administrative Science Quarterly*. v. 36, n. 3, pp. 421-458. 1991.

SDG 5 (achieve gender equality and empower all women and girls) has the weakest intensity of coherence.

Given the international recognition of Brazil in the early achievement of Millennium Development Goal 1 of eradicating extreme poverty and hunger (2000-2015) and the importance of the continuity of these advances in the Sustainable Development Goals cycle (2015-2030), this research focused on the coherence analysis of the federal legal framework on SDGs that present thematic affinity to MDG 1: SDG 1 and SDG 2.

Based on the analysis, it was possible to verify that the coherence intensity of the PNAE's legal framework with SDG 1 derives to a great extent from the integration it has with the Food Acquisition Programme (PAA). Of the total 19 coherence links identified, only 68.4% are directly related to PNAE and 31.6% were present in the PNAE's legal framework, but that did not have the main purpose of regulating this Programme. Of the 19 coherence links, only 21.1% are from excerpts of general application and 78.9% were connected to the legal minimum of thirty percent (30%) stipulated for the purchase of food from smallholder farming.

The research has shown two possible ways to increase the coherence intensity between SDG 1 and the PNAE's legal framework. The first would be to incorporate, into this programme, aspects exclusively present in the design of the PAA, such as the prioritization of food acquisition for women and those in extreme poverty. The other one would be to increase the minimum value for purchase of smallholder farming beyond the current thirty percent (30%).

An analogous but less pronounced situation was identified by analyzing the coherence intensity of the PNAE's legal framework with SDG 2. In this case, the coherence intensity depended to a less extent on the relationship between the PNAE and the PAA. Of the total 34 coherence links identified, 88.2% are directly related to PNAE and only 11.8% are present in the PNAE's legal framework, but that did not have the main purpose of regulating this Programme. In other words, the intensity of coherence was mainly due to the specific rules of the PNAE. Of the 34 coherence links, 44.1% are from excerpts of general application and 55.9% are connected to the legal minimum of thirty percent (30%) stipulated for the purchase of food from smallholder farming.

The PNAE is considered one of the initiatives res-

ponsible for the international recognition of the Brazilian success in the fight against hunger and poverty, favoring access to food, income generation and productive inclusion. Therefore, it integrates the set of public policies that have their experience shared by the Brazilian government through South-South cooperation. However, there is still room for the programme to continue to be improved, for example, based on international cooperation and the transnational agenda.

On the national level, it is expected that this be an input to the Brazilian government, especially to the National Commission for the Sustainable Development Goals (BRASIL, 2016c), so that it can evaluate the formulation and implementation of the PNAE's legal framework and effectively monitor policies that support the achievement of the SDGs.

On the international level, the 2030 Agenda for Sustainable Development approach allows the use of a common framework for coherence analysis between school feeding programmes of the signatory countries. Therefore, it is expected that this work sensitizes and inspires governments around the world to the importance of evaluating the coherence of their own school feeding programmes using the SDGs as bases, in order to enhance their legal frameworks. Finally, it is expected that the analysis presented here provide input for transnational and international knowledge sharing of national zero hunger models and encourages South-South and Triangular cooperation on fighting hunger and eradicating poverty.

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