



Using the SDG Framework to Advance Local Development Where Vale Operates: A Case Study From Canaã dos Carajás

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Objective

In May 2017, the Vale Foundation published in partnership with the United Nations University World Institute for Development Economics Research (UNU-WIDER)- the [Working Paper 2017/80 “Approaches to supporting local and community development”](#), which outlines the Foundation’s new partnership approach, the public–private social partnership, to foster development in areas affected by Vale SA’s operations. The case of Canaã dos Carajás is used as an example to explain the notable features and benefits of this new approach. The Vale Foundation’s report also highlights that there is room for improvement in terms of monitoring and assessing the impact of the interventions in the municipality and finding ways to foster more partnerships among the public and private sector actors in the region. In that respect, this brief proposes how the SDG framework can help identify areas of intervention, coordinate activities among public and private actors, and assess the impact of development interventions, reinforcing a targeted approach to public-private social partnerships and strengthening planning and assessment tools.

1. Background

This section provides background on Vale’s Public-Private Social Partnership (PPSP) approach, introduces the SDG framework, and explores how the PPSP approach can align with and build on the SDG framework.

1.1. The Vale Foundation approach

The Vale Foundation defines its mission as contributing to integrated socioeconomic development in the regions of Vale’s operations, supporting human capital in communities and respecting local cultural identities through education, health and social business programs.

In 2012, after accumulating experiences with working directly with municipalities to improve their delivery of public services, the Vale Foundation developed the concept of the PPSP. As Vale Foundation describes, the PPSP “is a strategy for building a series of inter-sectoral alliances aimed at promoting the sustainable development of territories where the company has large-scale enterprises, through joint efforts, and by mobilizing the resources and knowledge of civil society, governments, and businesses for integrated long-term strategic planning, around a common agenda...”¹

Vale Foundation’s PPSP approach aims to “strengthen the opportunities generated by large mining projects,” for instance by: “(i) promoting diversification of economic activities; (ii) supporting the qualifications and awareness of civil society, companies,

¹ Filgueiras, Liesel, Andreia Rabetim, Isabel Aché, [“Approaches to supporting local and community development”](#), WIDER Working Paper 2017/80 (May 2017), p. 5.

and government regarding the management of territorial development; (iii) strengthening capacity building and sharing resources and knowledge to achieve the goals defined in the public sphere.”² This approach ensures that the Vale Foundation always proceeds through a joint effort with other actors and players in the territory impacted by the operations.

1.2. The SDG framework

In September 2015, the UN member countries adopted Agenda 2030, the globally-agreed sustainable development agenda for 2015 to 2030, following the term of the Millennium Development Goals (MDGs). It is composed of 17 Sustainable Development Goals (SDGs), shown in figure 1, operationalized by 169 targets. The SDG framework differentiates itself from the MDG framework in three important ways: (1) it is more ambitious, seeking to, for example, eliminate rather than reduce poverty; (2) it is more comprehensive with greater focus on inclusive development and planetary boundaries, thereby also applying to developed countries rather than primarily developing countries; and (3) while the MDG framework was primarily targeted at developing country governments, the achievement of the SDGs will depend on the support of all stakeholders including the private sector.



Figure 1: Sustainable Development Goals



Source: United Nations

In 2017, the global indicator framework was adopted, including 232 indicators to measure progress towards the targets under each goal. The resolution adopting these indicators recommended that “...national statistical systems explore ways to integrate

² Ibid.



new data sources into their systems to satisfy new data needs of the 2030 Agenda for Sustainable Development, as appropriate, and also stresses the role of national statistical offices as the coordinator of the national statistical system.”³ This is likely to take some time. While some data on specific indicators are already collected by national statistics agencies, such as in health and education, other indicators will require the collection and analysis of data that are not yet readily available.

While the SDG framework is global in nature and the aforementioned indicators are to be collected at the national level, the achievement of the SDGs will depend in large part on policies and actions taken at the sub-national level; by some estimates, as much as 65 percent of the SDG agenda cannot be achieved without the involvement of sub-national actors.⁴ This is particularly true in countries where decentralization has transferred the responsibility of basic public service delivery to the regional and local governments.⁵ As such, the related SDGs should be implemented and monitored at the level of the implementing entity. That “progress should not only be tracked at the national level”⁶ has also been an important lesson from the implementation of the preceding MDGs.

1.3. Private sector contributions to the SDGs

Since the adoption of the SDGs in 2015, the private sector has increasingly shown interest and commitment to integrating the new development agenda into their sustainability strategies.⁷ For many sectors, the business-as-usual models are being challenged by global forces such as climate change, globalization, urbanization, competition for raw materials and technological disruptions. Furthermore, companies are increasingly under pressure to show to their consumers, employees, and institutional investors that they contribute to sustainable societies.⁸

The mining sector is no exception. Traditionally, interventions to support communities impacted by mining operations, including to secure a ‘social license to operate,’ have tended to be the responsibility of the headquarters-based corporate social responsibility (CSR) department, with little interaction with the core business units. However, with increasing information about how the mining sector can contribute more holistically to the SDGs, as well as increased information about the cost of social conflict,⁹ mining companies are developing new business models that are more

³ [“Resolution adopted by the General Assembly on 6 July 2017”](#), A/RES/71/313, United Nations (July 10, 2017).

⁴ [“Getting started with the SDGs in cities: A guide for stakeholders”](#) UNSDSN (July 2016).

⁵ [“Roadmap for localizing the SDGs: Implementation and monitoring at the sub-national level”](#) Global Taskforce of Local and Regional Governments (2016).

⁶ Ibid.

⁷ In 2015, 71% of surveyed companies said they planned to engage with the SDGs. [“Making it your business: Engaging with the Sustainable Development Goals.”](#) PWC (2015).

⁸ Ibid.

⁹ Davis, Rachel and Daniel Franks, [“Costs of Company-Community Conflict in the Extractive Sector.”](#) CSR Initiative, (2014).

tailored to their local contexts. The “Mapping Mining to the Sustainable Development Goals Atlas” outlines how mining companies can support each SDG and provides case studies.¹⁰ The strength of the SDG framework is that it provides an opportunity for mining companies to align their strategies, incentive mechanisms and interventions to national and sub-national priorities.

2. Vale Foundation’s interventions and alignment to the SDGs in CC

The PPSP approach aligns squarely with SDG 17, which calls for partnerships to strengthen implementation of the SDGs. The other 16 SDGs, in turn, can usefully support the PPSP approach by providing a common framework for development among the relevant stakeholders, including for measuring progress and impact.

Helpfully, Brazil has been at the forefront of using the SDG framework to plan and monitor development at the national and sub-national levels. Presidential Decree 8.892 from October 2016 established the National Commission for the SDGs, which includes representatives from the three levels of government and civil society.¹¹ Data collection platforms at the municipal level have been setup to help stakeholders identify development needs and measure progress.

This section outlines Vale Foundation’s interventions in Canaã dos Carajás (CC), and shows how SDG related data at the municipal level can support data driven policy making (see section 3 for further discussion).

2.1. Vale Foundation’s interventions in CC

At the outset of its engagement with the Municipality of CC in 2013, the Vale Foundation supported several socioeconomic studies and needs assessments to identify areas for intervention, such as administrative capacities and opportunities for local development. A central focus of Vale Foundations’ interventions was to support the review of the city’s Master Plan that includes land use planning for the city and its growing areas as well as guidelines for better managing urban development. The Foundation also supported the drafting of Municipal Plans for health, education, sewage, and urban mobility to guide more targeted interventions. Table 1 outlines Vale Foundation’s projects between 2012-2018, which we have grouped according to the SDGs.



¹⁰ [“Mapping Mining to the Sustainable Development Goals: An Atlas,”](#) CCSI, SDSN, UNDP, and WEF (2016).

¹¹ [“Comissão Nacional para os ODS”](#) Ministério do Meio Ambiente (2016).

Table 1: Vale Foundation's programs in CC between 2012-2018 according to SDG:

Vale Foundation Program	SDG	Description
Agricultural equipment and management training for rural producers	2 & 8	Zero hunger, Decent work and economic growth
Training of primary healthcare professionals and supply of equipment to healthcare units (phase I)	3	Good health and wellbeing
Improving and expanding primary healthcare services (phase II)	3	Good health and wellbeing
Promoting health for children through training programas and campaigns	3	Good health and wellbeing
Initiative to promote and teach healthy eating habits	3	Good health and wellbeing
Training health professionals on prevention, identification and caring for those diagnosed with leprosy	3	Good health and wellbeing
Supporting the planning and management of the Municipal Health Department	3	Good health and wellbeing
Supporting the elaboration of the municipal health plan	3	Good health and wellbeing
Supporting family health institutions	3	Good health and wellbeing
Providing training to health professionals in mental health institutions	3	Good health and wellbeing
Course provided to health professionals on National Humanization Policy	3	Good health and wellbeing
Training of teachers, promotion of reading and increasing library collections in municipal schools	4	Quality education
Creating a reading space and enhancing the library at the Cultural and Community Center	4	Quality education
Promoting reading and access to books	4	Quality education
Improvement of the Young and Adult Education (EJA) curriculum	4	Quality education
Improving the quality of public education (Pact of Pará)	4	Quality education
Promoting reading and books for Young and Adult Education (EJA)	4	Quality education
Supporting business development and entrepreneurship - AGIR (phase 1)	8 & 9	Decent work and economic growth, industry innovation and infrastructure
Supporting business development and entrepreneurship - AGIR (phase 2)	8 & 9	Decent work and economic growth, industry innovation and infrastructure
Developing a business incubation agency	8 & 9	Decent work and economic growth, industry innovation and infrastructure
Supporting programs at the Cultural and Community Center	11	Sustainable cities and communities

Source: [Vale Foundation](#) (intervention information), CCSI (SDG classification)

2.2. Comparing CC's development indicators with other Municipalities

The National Confederation of Municipalities (CNM) has developed the [Municipal Performance Platform, Mandala](#). This data platform allows users to assess how the 5,579 Municipalities in Brazil are performing in achieving the SDGs. Municipalities are grouped in order to allow for comparisons among municipalities with similar characteristics (such as the municipality's development index, population, tax revenues and poverty rates). CC is grouped along with 2,390 other municipalities. 28 indicators (based on the SDG indicators but adapted to existing municipal statistics) are compiled with the latest statistics available (data from 2014-2016, as of this writing) and divided up into four categories, namely economic, social, environmental and institutional performance (represented by letters in the figure below¹²). Depending on how well the municipality performs in comparison to its peers, the letters (representing the indicators) are positioned in red (lagging behind), yellow (average) or green (outperforming). The figure below shows the results for CC.

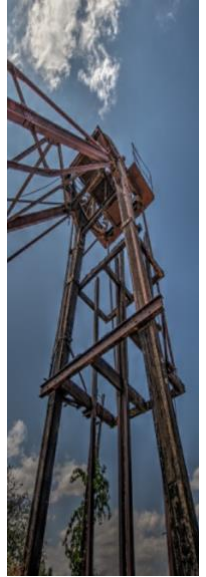
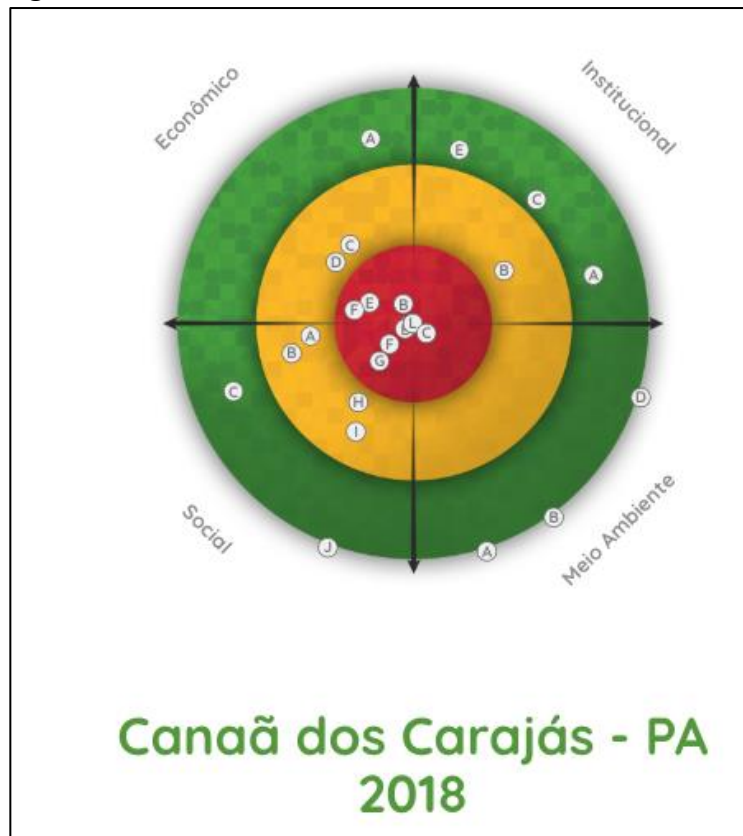


Figure 2: Mandala results for CC¹³



Source: [Confederação Nacional de Municípios](#)

¹² In each of the 4 categories, the indicators are represented by letters A-M. In institutional performance, there are 5 indicators, A – E; in economic performance, there are 6 indicators, A - F; and so on.

¹³ See complete results for CC with a more comprehensive explanation of the indicators and what SDGs they are relevant for in the annex.



While in the institutional and environmental categories CC outperforms its peers in most indicators, CC performs poorly on half of the economic and social indicators.

This tool provides a complementary assessment to the socioeconomic studies performed by the Vale Foundation prior to deciding in which areas to intervene. In the social category, CC performs poorly particularly in the education indicators (points D, E, F, G¹⁴ in the social category in the figure above –these related to learning Indices in mathematics and Portuguese at age 5 and 9). This supports the Vale Foundation’s assessment to develop projects that help address SDG 4, quality education. The same is true for the programs to advance SDG 8, inclusive and sustainable economic growth, as in the economic category, the formal employment and remuneration of employees’ indicators are worse than most of CC’s peers (points B and F in the economic category).

The analysis also provides evidence that more efforts need to be taken in CC to increase fast internet access (point E in the economic category), reduce the number of homicides (points K and L in the social category) and improve sanitation (point C in the environmental category).

2.3. Tracking progress over time

The indicators are useful for assessing baseline needs relative to the SDGs, but they are also important and valuable for tracking performance over time, for measuring the impact of interventions, and for qualitative assessments of the effectiveness of policy interventions. When indicators have not improved, despite targeted interventions, there is a need to review and potentially adapt the policy interventions.

Notably, there will likely be a lag between policy interventions and improved outcomes. In education, for example, it will take several years for a curriculum change that focuses more on reading skills to show impact on improved reading outcomes among children. The time lag is context specific and needs to be determined with care to ensure that the right policy consequences are taken. Impact indicators are more difficult to measure and analyze due to the time lag than output indicators (such as, for instance, number of people trained or program beneficiaries), but they are critical to inform policies.

The Mandala platform will be valuable for the Vale Foundation’s forthcoming assessment of their interventions, and Mandala or similar local data platforms will be useful for the design of further PPSP programs. It is too early to do a full data-based assessment of the CC PPSP program, as Vale Foundation’s interventions are too recent

¹⁴ Some of the letters are not visible in this figure as they are overlapping. On the interactive Mandala platform, navigation from one indicator to the next allows for an in-depth understanding of the information covered by the indicator.

to have yielded measurable impact. Moreover, while the Mandala platform is valuable to quickly visualize how CC performs against comparable municipalities, it has only been setup relatively recently so it does not yet contain time series data to track progress over time in CC. However, the [SDG Portal](#) developed with the support of the Social Service of Industry (SESI) contains official government statistics categorized by SDG for all Municipalities. The time-series starts in 1990 where indicators are available. This information allows one to assess developments and trends over time. Particularly for indicators that were covered by the MDGs, Brazil has collected significant amounts of data at the municipal level. The portal also allows one to compare statistical trends among Municipalities.



While a more comprehensive analysis of the statistics, trends and potential explanations of the results are beyond the scope of this brief, below are example statistics available on the portal in the areas in which the Vale Foundation is most active (SDGs 3, 4 and 8) and that can provide contextual data for the Foundation's interventions. To help assess whether the trends are in line with CC's peers, comparable statistics are shown. Either the best performing Municipality from Pará State, the Pará State average or Paragominas (another municipality highly dependent on mining) statistics have been included. This section includes indicators where CC performs well, as well as indicators where CC lags behind its peers.

2.3.1. CC outperforming its peers

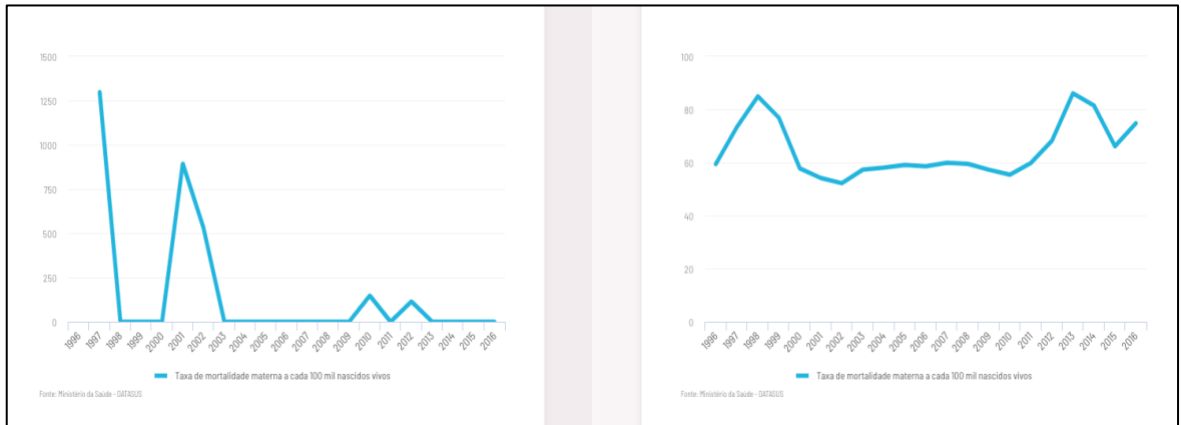
SDG 3: Good Health and Wellbeing¹⁵

For SDG 3, the portal provides 12 indicators, 10 of which are collected at the municipality level and 2 at the state level. A core indicator related to SDG3 is that of maternal mortality. CC reached a maternal mortality rate of 0 per 100, 000 in 2016 and 6 in 2017, well below the Brazilian national target of 35. This likely reflects the improvement of health services in CC over the preceding years. CC is actually the best performing municipality in Pará on this indicator.

¹⁵ ["Mortalidade materna"](#) Relatórios Dinâmicos, Portal ODS (2017).



Figure 3: Maternal mortality rate per 100,000 births in Canaã dos Carajas (left) and Pará State (right)



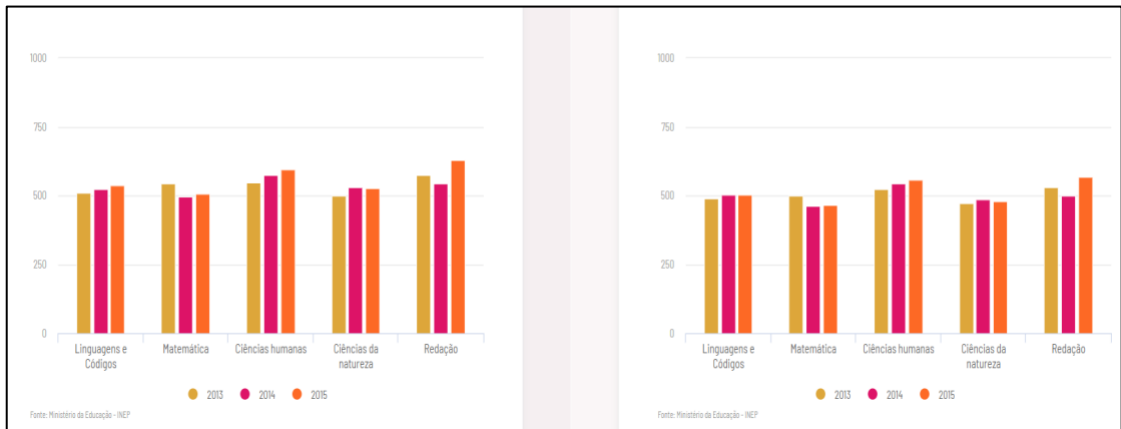
Source: [Portal ODS](#) (2017).

SDG 4: Access to Education¹⁶

Under SDG 4 the portal provides 8 indicators, all of which are collected at the municipal level. Statistics are collected about school participation rates, the quality of education, and test averages.

CC performs better than many other municipalities in Pará state, and better than the state average, in terms of students’ results at the National High School Examination from 2013 to 2015. Averages increased in several topics over that timeframe as well, including in language and writing.

Figure 4: Averages in Languages, Mathematics and Writing of the National High School Examination (ENEM) - 2013-2015 in Canaã dos Carajas (left) and Pará state (right)



Source: [Portal ODS](#) (2015).

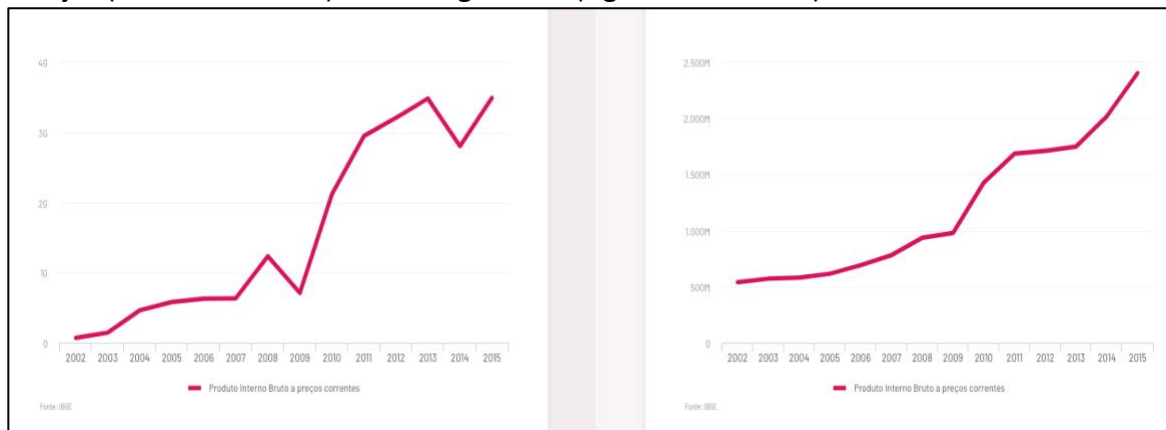
¹⁶ “Educação infantil,” Portal ODS (2010).

SDG 8: Decent Work and Economic Growth¹⁷

Under SDG 8 the portal provides 10 indicators, 5 of which are collected at the municipal level and 5 at the state level. CC's GDP has grown substantially since 2002, which is mainly related to industrial development. For illustration purposes, this is compared with the GDP increase in Paragominas, another mining rich municipality in Pará State. It may be hard to compare the rates of growth, given the different stages of development of the respective mining projects. However, it is still instructive to note fluctuations in GDP, which can be expected in resource-driven growth, due to project life-cycles and volatility of prices and production. Understanding such fluctuations can help with the design of complementary economic programs to attenuate the fluctuations.



Figure 5: Gross Domestic Product (GDP) at current prices - 2002-2015 in Canaã dos Carajas (left in billion R\$) and Paragominas (right in million R\$)



Source: [Portal ODS](#) (2015).

2.3.2. CC lagging its peers

SDG 3: Good Health and Wellbeing¹⁸

While there has been an overall decline in child (under 5 years) mortality in CC from its peak in 2003, child mortality rates have been rising again since 2009. In 2016, 23.91 children (under 1 year) out of 1,000 births died.

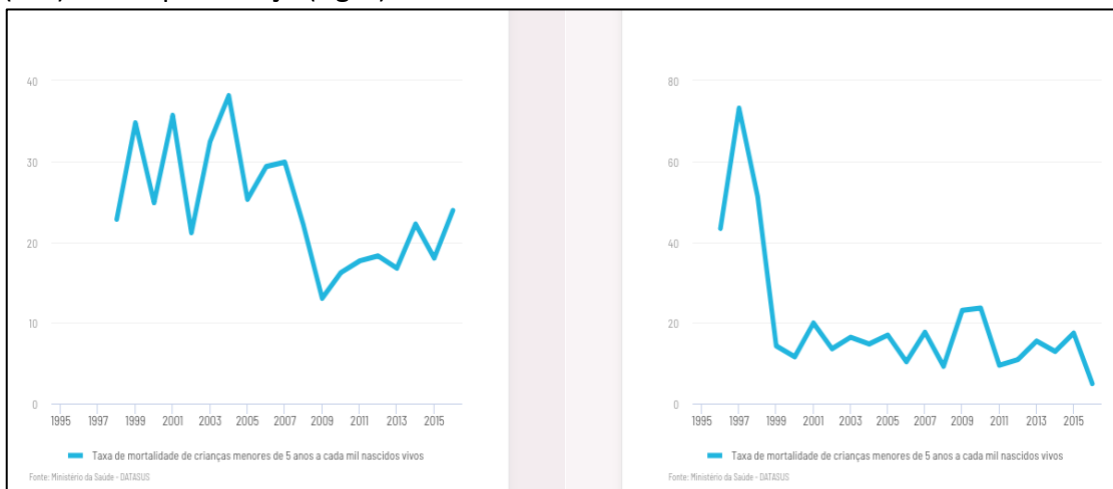
This compares to a 2016 child mortality rate of 4.96 out of 1,000 births in Capitão Poço, which is the best performing municipality in this statistic in the State of Pará. It is also noteworthy that between 1999-2015, the trend was relatively flat and does not show similar fluctuations as observed in CC.

¹⁷ [“Produto interno bruto,”](#) Portal ODS (2016).

¹⁸ [“Mortalidade materna”](#) Relatórios Dinâmicos, Portal ODS (2017).



Figure 6: Mortality rate of children under 5 years per 1000 births in Canaã dos Carajas (left) and Capitão Poço (right)



Source: [Portal ODS](#)

SDG 4: Quality Education¹⁹

The Basic Development Index (IDEB) is performed every two years and gives a rating from 0 to 10 based on examination results during primary education. This test is performed during the first and last year of primary education. Figure 7 shows that first year test results have improved between 2005 and 2017 in CC. However, there has been a fall in the results for the final year exams between 2015 and 2017. The results are lower than the national average. Compared to other Municipalities in the State of Pará, CC is ranked 12th for early year results and 42nd for late year results (out of 144 municipalities). Ulianópolis, the best performing Municipality in Pará for late year results, has seen a consistently improving trend since 2007.

Figure 7: Basic Development Index (IDEB) in Canaã dos Carajas (left) and Ulianópolis (right)



Source: [Portal ODS](#)

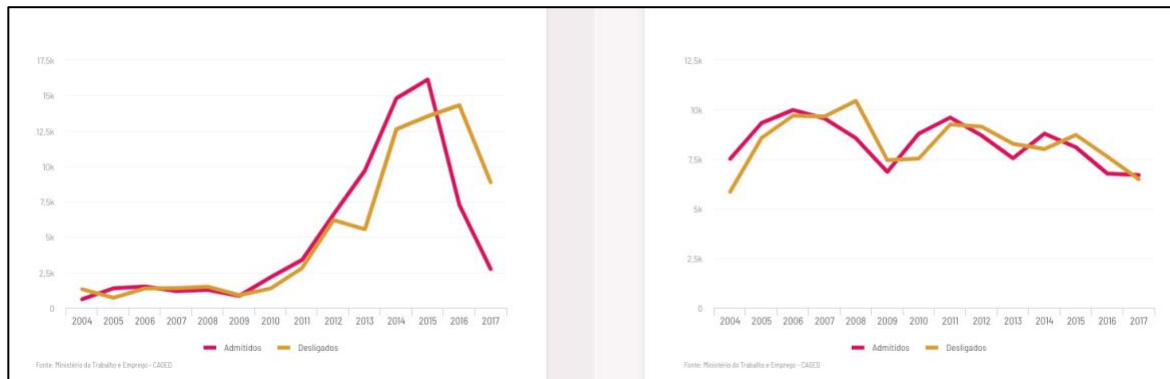
¹⁹ "[Educação infantil.](#)" Portal ODS (2010).

SDG 8: Decent Work and Economic Growth²⁰

Figure 8 shows the number of jobs created and ended from 2004 to 2017: job creation grew rapidly until 2016 and then became net negative. Job creation and loss could correlate with the project cycle of Vale’s mine, as Vale is the main driver for economic activity in CC. Indeed, the construction phase of a mine generates a boom in employment (from 2014 to 2016 in CC); when the mine starts operation, the employment needs are reduced.²¹ A similar experience comes from Paragominas where a large bauxite mine finished construction and started operations in 2007. The net employment fall in CC may have been exacerbated by the economic crisis between 2015 and 2017. A similar downward trend can be observed in Paragominas.



Figure 8: Number of people hired and laid off in Canaã dos Carajás (left) and Paragominas (right)



Source: [Portal ODS](#)

3. Using the SDG framework for coordinated and evidence based decision making

A coordinated approach among public, private and social actors, like that championed by Vale Foundation’s PPSP approach, is key to guarantee efficiency and guide development planning, policy interventions and spending. The SDG framework can instrumentally support this process. It provides a common language of what development means, thereby helping to coordinate development activities among the various levels of governments (municipal, state and national), and among stakeholders (public, private, and social) in a region. It also supports evidence-based decision making, as it enables stakeholders to identify development targets and measure progress against selected indicators. Having such targets and being able to compare development indices with peer municipalities helps identify which areas to prioritize and what resources are required. By tracking progress over time, the stakeholders can

²⁰ [“Produto interno bruto,”](#) Portal ODS (2016).

²¹ [“Canaã dos Carajás afunda no desemprego com quase 8 mil demissões em 2017,”](#) Portal Canaã (December 13, 2017).



assess whether previous interventions have been successful or not, and adapt their policies or re-allocate resources accordingly.

A lot of valuable information is already collected in Brazil at the municipality level which can be useful to strengthen the Vale Foundation's engagement in CC. To implement CC's recently published long-term development plan,²² targets could be set and the respective development indicators tracked. This would help assess whether the Municipality is on track in reaching the targets and hold stakeholders accountable. In areas that are identified as priorities for the municipality but which lack data, the Municipal Government, Vale Foundation and its partners can develop new data generation systems that support evidence-based decision making. This may be particularly important as Vale Foundation expands its PPSP approach into areas with less developed statistical data collection and analysis.

The world is entering an era where data is generated and used at an unprecedented scale. Technologies to collect real-time data at lower costs than surveys or censuses are increasingly available. So too are ICT programs that help policy makers convert the data to support policy decision making.²³ Even relatively straightforward data platforms like the ones used in this brief provide valuable information to stakeholders seeking to improve development outcomes in a region. A coordinated approach among stakeholders, like that promoted by Vale Foundation's PPSP approach, that draws on real-time and time-series data analyses can more effectively achieve shared development objectives.

²² ["Plano de Desenvolvimento CANAÃ 2035,"](#) Prefeitura Canaã dos Carjás (August 2015).

²³ ["Guidance on the Use of Geospatial Data and Technologies in Immunization Programs,"](#) UNICEF, Health GeoLab Collaborative (October 2018).



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