

## MPPN Policy Briefing

### The MPI as a Tool for Achieving Poverty Reduction Goals

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In July 2016, just nine months after launching the Multidimensional Poverty Index of Costa Rica (MPI-CR), President Luis Guillermo Solís Rivera issued Presidential Directive N°045-MP. In this directive he called on ‘all heads and officials of ministries and institutions of the public social sector to use the Multidimensional Poverty Index as an official tool for measuring poverty, guiding

the allocation of resources, and monitoring and evaluating social programmes’.

The directive also announced a pilot project to examine the 2017 programme budgeting process in greater detail, starting with the seven institutions that could have the greatest impact on multi-dimensional poverty reduction.



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The selection of these institutions was primarily based on the identification of the indicators that contribute the most to the MPI-CR, since those showing a greater proportion of households with specific deprivations are the most likely to contribute to the improvements in the index. Therefore, among the 19 indicators that make up the MPI-CR, the following six indicators were identified as priorities (next to each indicator is the percentage of poor households with that deprivation in 2015).

1. Low human capital (63%);
2. No health insurance (63%);
3. No internet access (50%);
4. Roof, floor, and outside walls in poor condition (43%);
5. Independent informal employment (28%);
6. School non-attendance (23%).

The next step involved the use of the Social Management Dashboard, which connects each MPI indicator with the relevant institutions. The dashboard was used to identify seven institutions that

would take part in the first budgeting exercise based on the MPI-CR. These institutions were: The National Scholarship Fund (FONABE, in Spanish), the Social Welfare Institute (IMAS), the Ministry of Labour and Social Security (MTSS), the National Institute of Apprenticeship (INA), the Costa Rican Social Security Fund (CCSS), the Housing Mortgage Bank (BANHVI), and the National Telecommunications Fund (FONATEL).

A simulation exercise was carried out to see the possible impact that this work would have on the reduction of multidimensional poverty prior to each institution planning their budgets. This briefing presents the results of this exercise.

### HOW WAS THIS EXERCISE CARRIED OUT?

This theoretical work was carried out thanks to the public-private partnership between the Costa Rican government and the Horizonte Positivo Association, with support from the consulting firm Cocobolo for statistical analysis. This analysis was done using a statistical simulation.



The simulation considered the current poverty estimation based on data from the household survey carried out by the National Institute of Statistics and Census (INEC). This survey allows us to observe which deprivations are experienced by each member of every single household included in the sample. The exercise simulates a reduction in the number of deprivations in some of these households (assuming that the government provides them with the benefits they need to no longer experience this deprivation) and re-computes the country's multi-dimensional poverty rate.

In order to create the simulations, the main inputs required were the goals committed to by each institution for 2017. To do this, a baseline was created using the goals included in the National Development Plan 2015–2018 (NDP). The NDP is a document that sets actions and goals for each administration.

After the revision of the NDP goals, an analysis of the historical trends in meeting goals by each of the seven institutions was conducted in order to refine

the estimations. Finally, ten programmes for poverty reduction that could influence the six MPI-CR indicators were identified within the institutions involved. The details are presented in table 1 (p. 4).

However, the subsidy from the Housing Mortgage Bank (BANHVI) was excluded from the final model. For this reason, only nine programmes, six institutions, and five MPI-CR indicators were included in the exercise.

Although it is likely that other indicators could be affected by these programmes, the table above features those that show the most direct relationship with each of the selected programmes.

In most cases, a potential increase in the number of beneficiaries for 2017 was used as an input in order to run the simulations. In others, the goal for that year was used as input. Furthermore, in order to capture the possible effect of poverty reduction in the six planning regions into which the country is divided, the regional distribution of beneficiaries according to the proportion of poor households



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**Table 1. Indicators Associated with Each Institution / Presidential Directive Programme**

Institution	Programme	Dimension	Indicator
FONABE	Grants	Education	School non-attendance
IMAS	AVANCEMOS (well-being and family support)		
MTSS	PRONAE / EMPLEATE (jobs)		
INA	Training of graduates		Low human capital
MTSS	PRONAE (temporary income)	Employment	Independent informal employment
MTSS	PRONAMYPE (credits)		
MTSS	PRONAMYPE (training)		
BANHVI	Housing subsidies	Housing	Roof, floor and outside walls in poor condition
FONATEL	Connected homes		No Internet access
CCSS	Insurance covered by the state	Health	No health insurance

Note: The National Scholarship Fund (FONABE), the Joint Social Welfare Institute (IMAS), the Ministry of Work and Social Security (MTSS), the National Institute of Apprenticeship (INA), the Costa Rican Social Security Fund (CCSS), the Housing Mortgage Bank (BANHVI), and the National Telecommunications Fund (FONATEL).

Source: Compilation based on information from the Fund for Social Development and Family Allowances (FODESAF) and the MPI.

with the associated MPI deprivation was taken into account. This distribution can be seen in the maps on the opposite page.

Finally, the key assumption for the simulations was that all new benefits to be granted in 2017 would be effectively distributed to households identified as multidimensionally poor.

This assumption implies efficiency in the allocation of resources, prioritising households that are multidimensionally poor. However, it is a strong assumption, given that until now the majority of institutions in the social sector have prioritised benefits according to income poverty criteria.

Taking this into account, the simulated deprivation of the person/household is removed, and the basic indicators of the MPI related to incidence are re-computed, omitting the calculation of intensity and the MPI.

A total of 10,000 simulations like this were carried out. This is because, in accordance with classical statistics, the simulations were based on a random sample of a population and the estimate derived from this sample is just one of many possibilities, given the random selection of the sample. Therefore,

a sufficiently large number of samples had been taken in order to estimate the results of the MPI in the 10,000 simulations and to use this to calculate the interval with a 95% confidence level. The statistical exercise was programmed and carried out on R software.

**Regional Distribution of Deprivations (Percentage)**

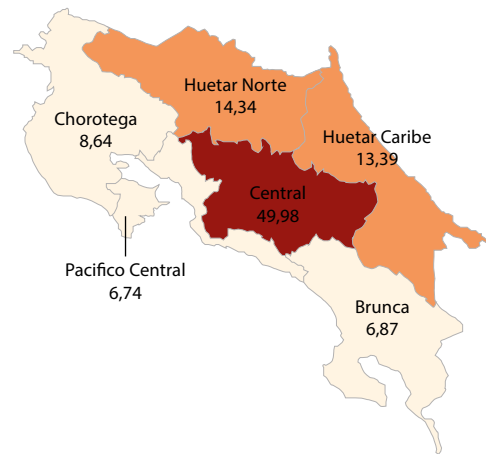
**School non-attendance**

Regional distribution of poor households with deprivations 2016



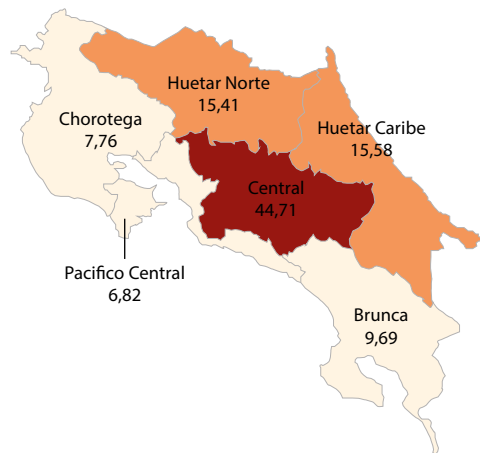
**No health insurance**

Regional distribution of poor households with deprivations 2016



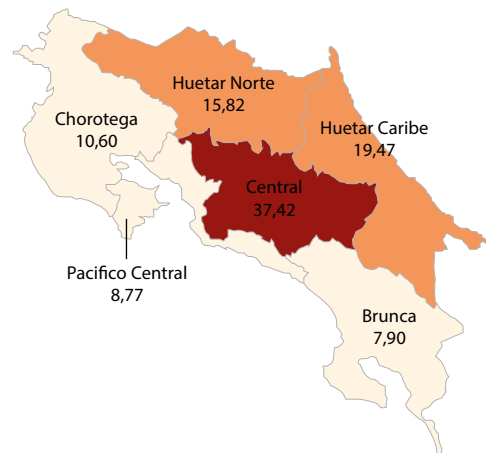
**Low human capital**

Regional distribution of poor households with deprivations 2016



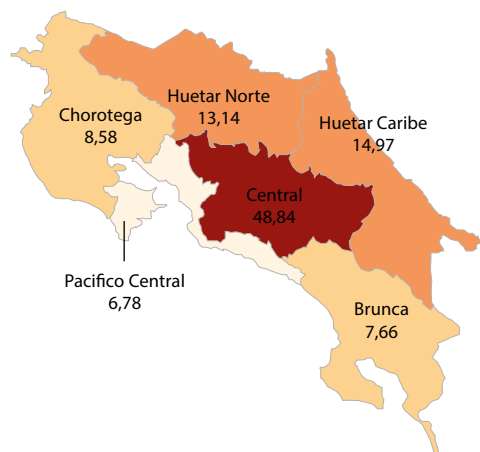
**No Internet access**

Regional distribution of poor households with deprivations 2016



**Independent informal employment**

Regional distribution of poor households with deprivations 2016



Source: Author's own compilation.

## RESULTS

Considering the simulated scenario, the reduction of the number of poor households varies between almost 27,000 and 32,000 at a national level, which represents a very significant reduction, as can be seen in Table 2.

In terms of incidence, namely the proportion of multidimensionally poor households, the results are presented in Table 3.

The simulation showed that the reduction in the incidence of multidimensional poverty would be significant, with an overall reduction of at least 1.79 percentage points, a maximum reduction of

2.14 percentage points, and, in some regions, a reduction of over 4 percentage points.

This scenario is very promising, but it should be acknowledged that its achievement is based on a series of assumptions. The strongest assumption is that all the new benefits of every participating programme will reach households that are currently multidimensionally poor. This is because, as already mentioned, selective policies traditionally base their allocation of resources, primarily, on levels of income poverty, which, while complementary to the MPI, is a different kind of poverty measurement.

**Table 2. Number of Poor Households: 2016 Observed and Simulated**

Region	2016 observed	Simulated		Difference	
		95% confidence interval		95% confidence interval	
		Lowest	Highest	Lowest	Highest
<b>Costa Rica</b>	<b>306,854</b>	<b>274,844</b>	<b>280,009</b>	<b>26,845</b>	<b>32,010</b>
Central	138,753	129,035	132,148	6,605	9,718
Chorotega	27,390	22,524	24,016	3,374	4,866
Central Pacific	23,247	18,030	19,593	3,654	5,217
Brunca	28,947	23,553	25,472	3,475	5,394
Huetar Caribe	47,286	42,687	44,591	2,695	4,599
Huetar North	41,231	35,634	37,589	3,642	5,597

Source: Author's own calculations with data from the National Household Survey (INEC) 2016.

**Table 3. Incidence of Multidimensional Poverty in Households: 2016 Observed and Simulated (Percentage)**

Region	2016 observed	Simulated		Difference	
		95% confidence interval		95% confidence interval	
		Lowest	Highest	Lowest	Highest
<b>Costa Rica</b>	<b>20.50</b>	<b>18.36</b>	<b>18.71</b>	<b>1.79</b>	<b>2.14</b>
Central	14.92	13.87	14.21	0.71	1.04
Chorotega	23.99	19.73	21.03	2.95	4.26
Central Pacific	25.89	20.08	21.82	4.07	5.81
Brunca	25.39	20.66	22.34	3.05	4.73
Huetar Caribe	35.64	32.17	33.61	2.03	3.47
Huetar North	35.55	30.73	32.41	3.14	4.83

Source: Author's own calculations with data from the National Household Survey (INEC) 2016.

These results were presented to the institutions involved to motivate them and help them understand the real impact the MPI-CR would have as a planning tool for the achievement of poverty-related objectives.

The efforts made by the current government to introduce the MPI-CR tool, particularly in tandem with the Bridge to Development strategy, could help achieve the goals set by institutions. The resulting reduction in multidimensional poverty could substantially improve the daily lives of the country's poor and, eventually, profoundly benefit the nation as a whole.

*Original in Spanish. Translated by Theodora Bradford.*





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