



The **tool**



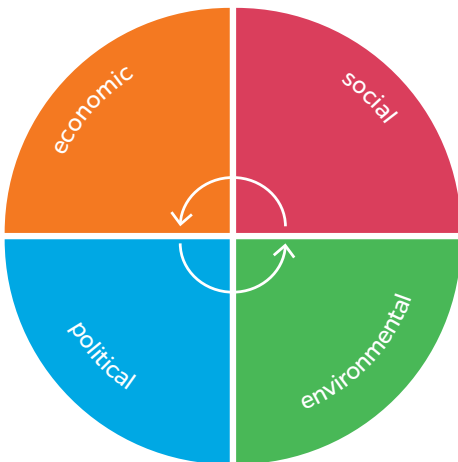


# 4.1

## The workings

One of the challenges of the PCDI is to overcome the sectoralization of other indexes and measures of progress. To achieve this, our tool is based on a sustainable human development approach, which calls for development to be understood as a “multidimensional” process that must reflect simultaneous progress in the economic, environmental, social and political dimensions in such a way that none of these is given priority over or subordinated to the others.

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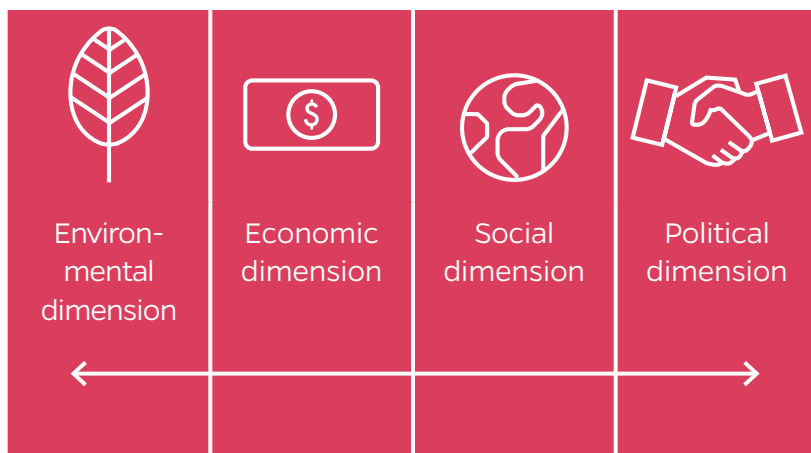
## POLICY ANALYSIS

The usual approaches to measuring development have tended to identify and isolate the effects of a policy within each development dimension, so that social and economic policies, for instance, are solely evaluated in terms of their social or economic results.

By contrast, the PCDI enables us to analyse a country's public policies through four sustainable development dimensions, thereby providing an integrated and comprehensive result of the links between policies and their multidimensional effects on development. The aim is to show how a country's policies perform in terms of PCD while avoiding exclusively sectorial or one-dimensional analysis.

To achieve this, we conducted qualitative analysis of 20 public policies through four different dimensions:

The PCDI enables us to analyse a country's public policies through four sustainable development dimensions



In order to organize the multidimensional analysis of each policy, an analysis matrix was constructed with two inputs.

20 Policies	Dimensions			
	Social	Economic	Political	Environmental
Peace & security				
Cooperation				
Justice & human rights				
Human mobility & migration				
Fiscal				
Financial				
Energy				
Biodiversity				
Fisheries				
Rural & agricultural development				
Education				
Health				
Social protection				
Equality				
Employment				
Science & technology				
Industry				
Infrastructures & transport				
Tourism				
Urban development				

Where policies bear similarities, they were grouped together in five components which to some extent constitute a sectorial classification of these policies: economic, social, global, environmental and production. However, it is important to bear in mind that every policy was analysed multidimensionally, compensating for any temptation to consider individual components as tantamount to a sustainable development dimension.

These five components constitute a reasonable approach for future recommendations arising from the index since decision-makers and the media can more easily identify them following sectorial inertia.

In addition to analysing public policies through the four sustainable development dimensions, two cross-cutting criteria based on human rights-based and the gender perspective were introduced throughout the analysis. In other words, throughout the analysis process, specific attention was given to the effects generated by policies from the human rights gender inequality perspectives. Issues like affordability and legal safeguards were therefore highlighted when dealing with access to goods and services. Employment with rights was a criterion for analysis as opposed to merely considering employment rates, and the impact differing by gender was analysed in industrial policy.

ECONOMIC COMPONENT	Fiscal
	Financial
SOCIAL COMPONENT	Education
	Health
	Social protection
	Equality
	Employment
	Science & technology
GLOBAL COMPONENT	Peace & security
	Cooperation
	Justice & human rights
	Human mobility & migration
ENVIRONMENTAL COMPONENT	Energy
	Biodiversity
	Fisheries
	Rural & agricultural development
PRODUCTION COMPONENT	Industry
	Infrastructure & transport
	Tourism
	Urban planning

The aim is therefore to establish what contributions a policy, such as fiscal policy, can make in the social (fairness and distribution), economic (tax base), environmental (spending on environmental protection) and political (transparency and financial control) dimensions.

Using both these criteria and existing literature, we established the effects and impacts of each policy that were most relevant to policy coherence for development. The example of fiscal policy analysis concludes with an indication of the policy's most sensitive aspects in each of its different dimensions and identified the relevant PCD evaluation variables.

Economic dimension	Social dimension	Environmental dimension	Political dimension
Mobilization resources for ESCR and basic social services	Redistributive function	Promotion sustainable production and consumption patterns	Fight against tax avoidance and evasion
			Transparency, participation & accountability

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Because the complete matrix provides and identifies variables in each of the 80 boxes (20 policies x 4 dimensions), some necessarily refer to similar or even identical issues. The social dimension of infrastructure policy, for instance, takes account of the maternal mortality rate in view of its close relationship to health infrastructure and its access in the same way that, in the social dimension of public health policy, the density of hospitals and health centres is taken into account.

These crossovers are not only reasonable in view of the methodology used. They also illustrate the need to avoid a merely sectorial understanding of the policies, but understand them instead in multidimensional terms. In those cases where there are exact duplications between two boxes in the matrix, the variable for one of them was eliminated.

We thus obtained a matrix where the essential aspects to be considered for every policy were turned into defined variables and indicator search criteria, such as in following example for education policy:

EDUCATION			
Social	Economic	Political	Environmental
Essential measuring aspects			
Quality of education	Investment in education	Type of education system	Impacts & commitment
Access to education	Role as social "elevator"	Participation in the system	
Gender gap in access			
Indicators			
Education systems: start year and duration of education cycle	Total number of teachers (ratio per teacher or per inhabitant, or per population attending school)	Public spending on education in relation to GDP, to budget and/or to enrolled population	Distance and/or time to reach school
Repetition rates Absenteeism Languages	Total funding / by origin of funds	Free and universal education (type of system)	Curricular and/or participatory initiatives on environmental education
Gender gap (access, dropouts)	Proportion of private spending of total spending on education	Existence of grants and programmes to prevent student dropout	
	Distribution of public spending by quintiles		



## INDICATOR SELECTION

Once the variables for analysis had been defined, the appropriate indicators were selected so that rigorous, approved standards could be put forward for each of them.

The selection was made from existing data bases which had to comply with at least two of the following basic characteristics:

1. Availability of a worldwide sample of countries. We used the longest possible list of countries (234). In other words, the indicators are constructed from a sufficiently representative sample of countries in all geographical areas, at all levels of development including a diversity of cultural identities, while delivering sufficient comparability.
2. Availability of sufficient rigour and acceptance in the construction of the indicator. This meant that to gauge the indicators' rigor, methodological documents and metadata had to be considered together with a combination of the prestige of the institution compiling them and the methodology used in their construction.

Indicators were then selected using these criteria for each and every one of the matrix variables, as in the example of taxation policy.

The search for and selection of indicators was no easy task. Many of the aspects we considered essential to measure were not available as indicators or at least not widely enough across countries. We encountered great heterogeneity in primary sources and considerable bias in the construction of global indicators subject to the interests of the institutions in charge of compiling and publicising them, as well as a paucity of data from some countries<sup>1</sup>.

Fiscal policy			
Economic dimension	Social Dimension	Environmental dimension	Political dimension
Tax revenue as percent of GDP [Global Finance Statistics, IMF]	Variation rate of the Gini Index pre and post taxes and transfers (%) [World Income Inequality Database]	Environmental protection expenditure [Global Finance Statistics, IMF]	Financial Secrecy Index [Tax Justice Network]
Social expenditure/ GDP [Global Finance Statistics, IMF]	Indirect taxes / total revenue [Global Finance Statistics, IMF]		Open Budget Index [International Budget Partnership]

<sup>1</sup> For more detailed information on some of the solutions considered, see Ospina, S., "De la teoría a la medición: Implicaciones sobre el uso de indicadores para la medición del desarrollo", in *Y después de 2015, ¿qué hacemos? XII Informe Anual de la Plataforma 2015 y más*, Madrid, 2015 y más, 2015, pp. 123-130.

Once the variables had been selected, they were codified and organized, using a total set of 201 indicators, the data for which were then selected under the criterion “latest available figure”.

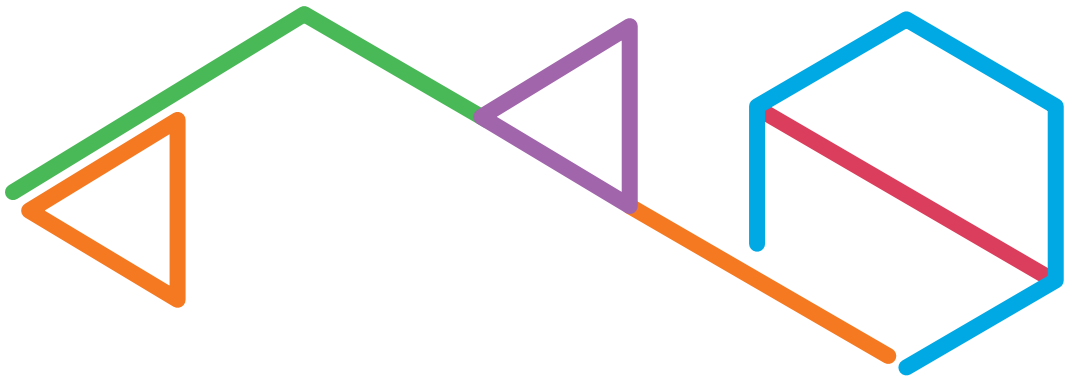
The distribution of indicators by policy was as follows:

Policies	No. indicators	Policy code
Peace & security	12	PYS
Cooperation	6	C
Justice & human rights	15	J
Human mobility & migration	8	M
Fiscal	7	FIS
Financial	6	F
Energy	6	EN
Biodiversity	12	B
Fisheries	12	P
Rural & agricultural development	13	DR
Education	14	EDU
Health	13	S
Social protection	10	PS
Equality	14	IG
Employment	9	EM
Science & technology	13	CIT
Industry	9	IN
Infrastructure & transport	10	IT
Tourism	6	T
Urban planning	6	U
<b>TOTAL</b>	<b>201</b>	

## PURGING THE DATA BASE

Using the initial data base of 201 indicators and 234 countries, the following steps were then taken:

- 1. Purging of data and countries.** Those countries for which more than 60% of data were missing were eliminated, as were variables where more than 60% of data were missing, leaving a set of available data of more than 50%. After this purge, 133 countries and 178 variables remained.
- 2. Correlation analysis.** The best variables with a correlation of over 70% were selected, those with more than 30% of missing data were eliminated, and some dichotomous variables were grouped together. This left 133 countries and 133 variables.
- 3. Factor analysis** This was conducted by component, eliminating variables using factor analysis. The result was the final data base with a total of 49 variables for 133 countries.



# 4.2

## The structure

The PCDI is divided up into five components: economic, social, global, environmental and production. These five components were calculated from the 49 variables selected: six in the economic component, nineteen in the social, ten in the global, eight in the environmental and six in the production component. Of the 49 variables, 18 reflected indicators contrary to sustainable development processes (such as school dropout rates, military spending and ecological footprint), whereas the other 31 reflected indicators that favoured them (such as inequality reduction, public spending on social protection and ratification of universal justice treaties). Thus, the PCDI has the following basic structure:

The PCDI is divided up into five components: economic, social, global, environmental and production

PCDI									
ECONOMIC COMP.		SOCIAL COMP.		GLOBAL COMP.		ENVIRONMETAL COMP.		GLOBAL COMP.	
+	-	+	-	+	-	+	-	+	-
3 variables	3 variables	13 variables	6 variables	8 variables	2 variables	4 variables	4 variables	3 variables	3 variables

## **CLASSIFICATION OF VARIABLES BY CONTRIBUTION TO DEVELOPMENT**

As we can see in the diagram, not all of the variables examined and maintained after statistically analysing the data measure positive contributions to development processes. Indeed, a large group measure aspects that would oppose processes that seek to promote development. The aim is to consider policies' social impacts not as unambiguous and unidirectional, but as ambivalent and having undesired effects. This fosters a better understanding of their net contribution to development processes.

Consequently, using the definitive data base, all the variables were classified according to whether they promoted or hampered development processes. They were therefore divided up in each component into those variables that contributed to and those that penalized development.

COMPONENT		CONTRIBUTING VARIABLES	
Economic component	FIS1	Tax revenue (% GDP)	
	FIS3	Variation rate of the Gini Index pre and post taxes and transfers (%)	
	FIS5	Environment protection expenditure (% GDP)	
Social component	EDU5	Survival rate to the last grade of secondary education, both sexes (%)	
	EDU11	Net enrolment rate, primary, gender parity index (GPI)	
	PS1	Public social protection expenditure (% GDP)	
	PS5	Share of population above statutory pensionable age receiving an old age pension	
	PS8	Benefits incidence in poorest quintile (%)	
	IG5_6_7	Legislation against sexual harassment and gender violence	
	IG11	Mandatory minimum length of paid maternity leave (in calendar days)	
	IG14	Position shown at the initiative of the UN in favour of the LGBT	
	S2	Healthy life expectancy	
	S3	Total density per 100,000 population: Hospitals	
	S11	Improved sanitation facilities (% of population with access)	
	CIT6	Enrolment ratio of female with respect to male in tertiary education (%)	
	CIT13	Percentage of graduates from tertiary education who are female (%)	
Global component	J4_5	Legality of homosexuality and equal marriage	
	J6	Participation in the ratification of international treaties of the UN about human rights (%)	
	J8	Universal jurisdiction	
	J9	Ratification of UN international justice treaties	
	J13_14_15	Women's rights in court	
	PYS6	International weapons treaties	
	M4_5	Convention relating to the Status of Refugees and International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families	
	C3	Existence of a specific structure of cooperation and appreciation of its political rank	
Environmental component	P2	Artisanal fishing opportunities	
	P4	Clean waters	
	P6	Marine biodiversity	
	P9	Participation in treaties, conventions and agreements on fishing in %	
Production component	IT3	Improved water supply, rural sector (% population with access)	
	IT4	Access to electricity (% population)	
	IN1	R&D expenditure (% GDP)	

## PENALIZING VARIABLES

	F2	Bank assets (% GDP)
	F5	External service, total debt / Exports of goods and services (%)
	FIS6	Financial Secrecy Index
	EDU2	Rate of out-of-school children of primary school age, both sexes (%)
	EDU8	Pupil-teacher ratio in pre-primary education
	EDU9	Pupil-teacher ratio in primary education
	EDU14	Repetition rate in primary education (all grades), both sexes (%)
	IG2	Unpaid family workers, female (% of female employment)
	EM6	Difference of vulnerable employment between women and men (%)
	PYS1	Military expenditure (% GDP)
	PYS3	Armed forces personnel, total (per 100,000 inhabitants)
	DR9	Use of fertilizers
	B2	Ecological Footprint of production (gha per person)
	EN2	Ecological Footprint of Imports (gha per person)
	EN4	Metric tons of carbon dioxide per person
	T1	International tourist arrivals (% of the population in the host country)
	IN5	Annual freshwater withdrawals, industry (% of total freshwater withdrawal)
	IN8	Difference between male and female employment in the industrial sector (%)

## CALCULATING THE COMPONENTS

The score for each of the PCDI's five components is calculated with a formula subtracting the normalized values of the variables contributing negatively to development from the normalized values of those that contribute positively. However, not all variables have the same weight. The weight attributed to them is drawn from the analysis of key components, since this provides a better summary of the whole set of information included in all the variables in a single concise indicator.

The results of these formulas provide us with five figures, one for each component, which are ultimately the basis for the final calculation of the PCDI.

<b>ECONOMIC COMPONENT</b>
$EC = [0,454*FIS1 + 0,297*FIS3 + 0,250*FIS5] - [0,333*F2 + 0,333*F5 + 0,333*FIS6]$
<b>SOCIAL COMPONENT</b>
$SC = [0,098*EDU5 + 0,074*EDU11 + 0,054*PS1 + 0,087*PS5 + 0,078*PS8 + 0,004*IG5_6_7 + 0,043*IG11 + 0,049*IG14 + 0,101*S2 + 0,084*S3 + 0,119*S11 + 0,112*CIT6 + 0,097*CIT13] - [0,146*EDU2 + 0,180*EDU8 + 0,195*EDU9 + 0,175*EDU14 + 0,150*IG2 + 0,172*EM6]$
<b>GLOBAL COMPONENT</b>
$GC = [0,131*J4_5 + 0,214*J6 + 0,175*J8 + 0,150*J9 + 0,160*J13_14_15 + 0,099*PYS6 + 0,021*M4_5 + 0,051*C3] - [0,499*PYS1 + 0,501*PYS3]$
<b>ENVIRONMENTAL COMPONENT</b>
$EC = [0,279*P2 + 0,220*P4 + 0,282*P6 + 0,219*P9] - [0,156*DR9 + 0,305*B2 + 0,252*EN2 + 0,287*EN4]$
<b>PRODUCTION COMPONENT</b>
$PC = [0,397*IT3 + 0,380*IT4 + 0,223*IN1] - [0,350*T1 + 0,359*IN5 + 0,292*IN8]$

## WEIGHTING THE COMPONENTS

The PCD approach requires us to consider the effects of States' public policies from a cosmopolitan perspective, in other words, without assuming that national policies only impact citizens of that particular country. Instead we need to identify States' net contributions to global development to the extent that their political actions have repercussions on areas beyond their own sovereign territories. Also, we need to show that certain components are stronger indicators of the impact on other countries and therefore on the scope to develop policies fostering development. These considerations need to be to the PCDI by attaching a relative weight to each component in line with the criterion "common but differentiated responsibilities".

Because the environmental and economic components are considered to have greater impact on global development issues, they are assigned a weighting factor of 3.

The global component, largely overlapping with what is conventionally known as foreign policy, is also highly influential, although in this case, given that its variables consist mainly of legislation, it is assigned a weighting factor of 2.

Finally, a weighting factor of 1 is assigned to the social and production components, given that they have fewer repercussions than the previous components on other countries' scope of action.

Once weighted, the resulting figures for each component are normalized using the min-max method (0-100).

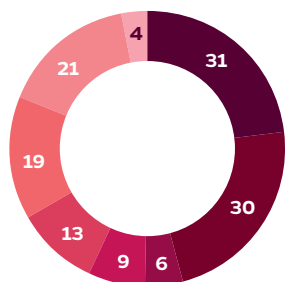
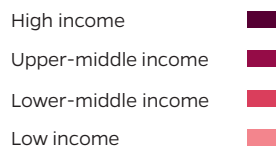
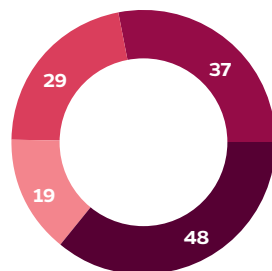
The PCDI is calculated as the arithmetic mean of the values of the five components: economic, environmental, social, global and production.

## THE FINAL SAMPLE

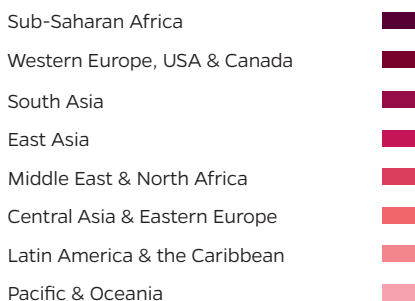
By offering data for 133 countries in its first version for 2016, the PCDI offers a classification on a global scale. The set of PCDI countries is a representative sample, both in terms of income level and geographical distribution.

In terms of the World Bank income groups, of the 133 countries, 48 are high income, 37 are upper-middle income, 29 are lower-middle income and 19 are low income. The more comprehensive representation of countries from the two highest income groups is due to greater availability of data for these countries. The PCDI is built using the reliable data available and lower income countries often have more difficulty providing sufficient data for many variables.

**FIGURE 80**  
Number of countries by income level

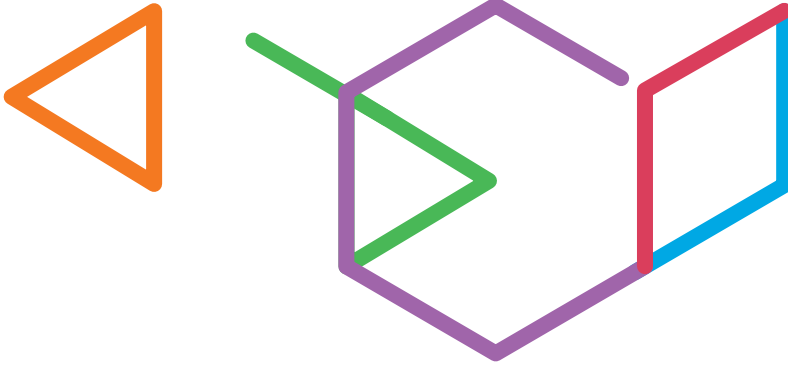


**FIGURE 81**  
Number of countries by region



The 133 countries have been organized into eight geographical-political regions. On this basis, the region with the largest number of countries is Sub-Saharan Africa with 31, followed by Western Europe, United States and Canada with 30. Latin America and the Caribbean show data for 21 countries, while Central Asia and Eastern Europe includes 19, followed by the Middle East and North Africa with 13 countries, East Asia with nine, South Asia with six and the Pacific and Oceania with four. The PCDI therefore encompasses the broadest possible political and geographical area. It should be noted that countries in a state of open armed conflict, such as Syria and Libya, have not been included, owing to the lack of up-to-date information.





## 4.3

### *Some basic data to understand the 2016 PCDI*

The PCDI enables us to establish a ranking with scores of between 0 and 100. First place goes to Denmark (89.60) and last place to Singapore (23.70).

The middle places on the PCDI go to the United States (64.72 in 65th place), Namibia (64.58 in 66th) and Austria (64.22 in 67th). Austria's score is therefore the median value, since 66 countries improve on this value and 66 countries obtain a lower score.

The mean score for all 133 countries is 61.84. A total of 73 countries are above this score and 60 are below it. The 133 countries are distributed across a 65.89 point range, with a mid-range of 56.65, a figure very close to Iran's score (55.87 in 91st place). The PCDI dispersion, in terms of standard deviation, is 12.95.

Mean	61,84
Variance	167,76
Standard deviation	12,95
Median	64,22
Range	65,89
Mid-range	56,65
Range (each quintile)	13,178

## First place in the PCDI goes to Denmark (89.60) and last place to Singapore (23.70)

Most countries (101 of the 133) fall between 50 and 81 points, standing from the 4th to the 104th places in the ranking. This would suggest that the distance between the policy coherence for development performances in the vast majority of countries is not insurmountable but indeed quite the contrary. By modifying certain index variables, countries could climb or drop back numerous places in the ranking in subsequent updates.

The dispersion in the scores obtained throughout the ranking shows a high degree of concentration in the previously mentioned ranges. Consequently, the 2016 PCDI shows that countries tend to be much closer to each other in policy coherence for development than might be expected other traditional development classifications.

PCDI scores and components for the first five countries in alphabetical order

COUNTRIES	RANKING	PCDI	ECONOM	SOCIAL	GLOBAL	ENVIRON	PRODUC
Albania	38	71,46	47,54	69,41	83,87	99,41	57,07
Algeria	56	66,97	65,28	68,24	45,15	82,51	73,68
Angola	132	35,93	70,24	16,64	36,13	55,51	1,11
Germany	21	75,33	60,84	87,45	91,74	88,12	48,51
Saudi Arabia	98	53,27	67,50	70,36	14,51	54,43	59,55