

Methodology of Calculating of the Index of Corporate Fight Against Climate Change and Compiling the Ranking of Sustainable Development and Fighting Climate Change Based on Corporate Social and Ecological Responsibility in Countries of the World

For calculating the **index of corporate fight against climate change**, which allows determining the contribution of corporate social and ecological responsibility into provision of sustainable development in countries of the world and performing international comparisons, we developed a proprietary methodology of evaluation, which envisages the following sequence of actions (Figure 1).

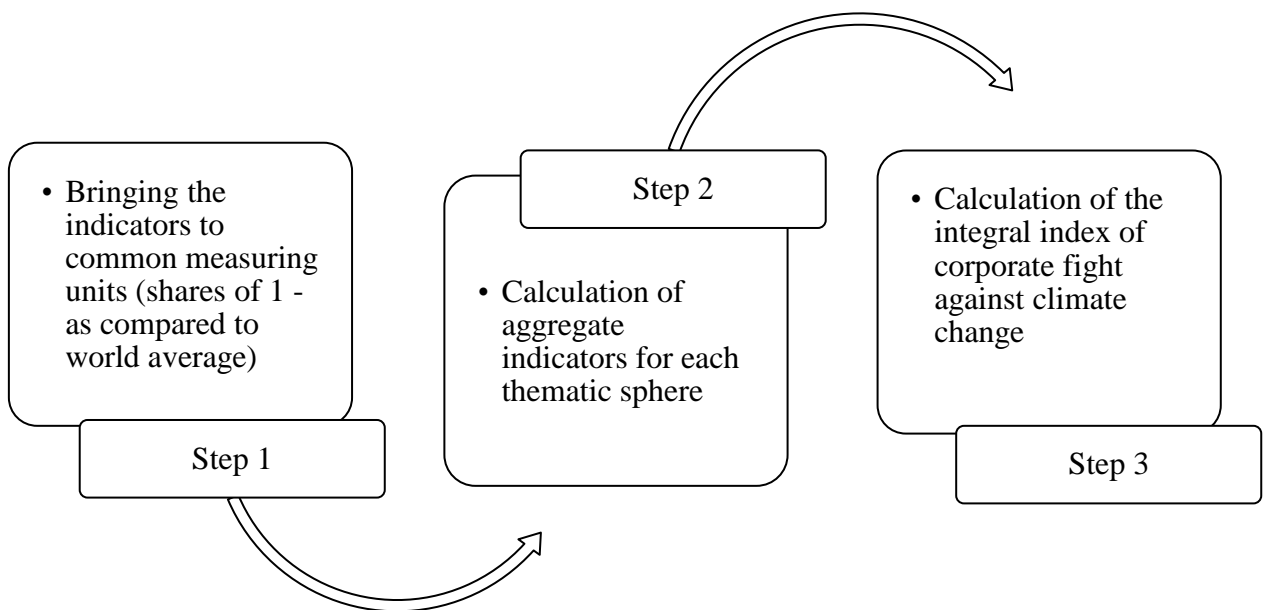


Figure 1. Algorithm of calculation of the index of corporate fight against climate change.

Source: developed and compiled by the authors.

As shown in Figure 1, **Step 1** envisages bringing the indicators to common measuring units, which are shares of 1 (1 is average value for the world). Depending on qualitative treatment of the initial indicator, one of the two corresponding formulas is used – (1) or (2).

Formula for indicators which value is the higher the better:

$$avi=ivi/dvw, \quad (1)$$

where avi – adjusted value of indicator, shares of 1 (the higher the better);

ivi – initial value of indicator, initial measuring units;

dvw – direct average of initial values of indicator for all countries of the world, initial measuring units.

Formula for indicators which value is the lower the better:

$$avi=dvw/ivi, \quad (2)$$

For calculating the adjusted indicators, the following logic is used (Table 1).

Table 1. Logic of calculation of adjusted indicators.

Thematic sphere	Initial (statistical) indicator	Qualitative treatment of initial indicator	Code for indicator
Sustainable development and fighting climate change	Energy Trilemma Index	the higher the better	ETI
	Economy Industrial Profile	the lower the better	EIP
	Resource rent in GDP	the lower the better	RR
	Pollution Index	the lower the better	PI
	Climate Index	the lower the better	CI
	Sustainable Development Index	the higher the better	SDI
State regulation of CSR	Energy efficiency regulation	the higher the better	EER
	Renewable energy regulation	the higher the better	RER
	Requirements on environment protection	the higher the better	REP
Market management of CSR	Consumer sophistication	the higher the better	CS
	Market competition	the higher the better	MC
	International trade freedom	the higher the better	ITF
	Entrepreneurial culture	the higher the better	EC

Source: developed and compiled by the authors.

Step 2 envisages calculation of aggregate indicators for each distinguished thematic sphere by formulas (3), (4), (5).

Aggregate indicator of sustainable development and fighting climate change is calculated with the help of the following formula:

$$SDFCC=(ETI+EIP+RR+PI+CI+SDI)/6 \quad (3)$$

Aggregate indicator of state regulation of CSR is calculated by the following formula:

$$SRCSR=(EER+RER+REP)/3 \quad (4)$$

Aggregate indicator of market management of CSR is calculated by the following formula:

$$\text{MMCSR}=(\text{CS}+\text{MC}+\text{ITF}+\text{EC})/4 \quad (5)$$

For values of all aggregate indicators, the higher the better. **Step 3** envisages calculation of the integral index of corporate fight against climate change by the following formula:

$$\text{Icfcc}=\text{SDFCC}/[(\text{SRCSR}+\text{SRCSR})/2] \quad (6)$$

The higher the value of the integral index of corporate fight against climate change (Icfcc), the higher the country's position in the global **rankings of sustainable development and fighting climate change based corporate social and ecological responsibility**.

Depending on the obtained values of aggregate indicators (at Step 2), **countries of the world are classified by the criterion of sustainable development and fighting climate change into the following categories:**

- “Green” economies with developed CSR: countries that show a high level of sustainable development and active fight against climate change based on corporate social and ecological responsibility;
- “Green” economies without vivid CSR: countries that show high level of sustainable development and active fight against climate change that are not connected to corporate social and ecological responsibility;
- Economics with “green” potential based on CSR: countries that show moderate and low level of sustainable development and poor fight against climate change, but possessing the potential of its increase based on corporate social and ecological responsibility;
- Economies without “green” potential based on CSR: countries that show moderate and low level of sustainable development and poor fight against climate change, which is not connected to and cannot be increased by means of corporate social and ecological responsibility.

Scale for classifying countries by the criterion of sustainable development and fighting climate change is shown on fig. 2.

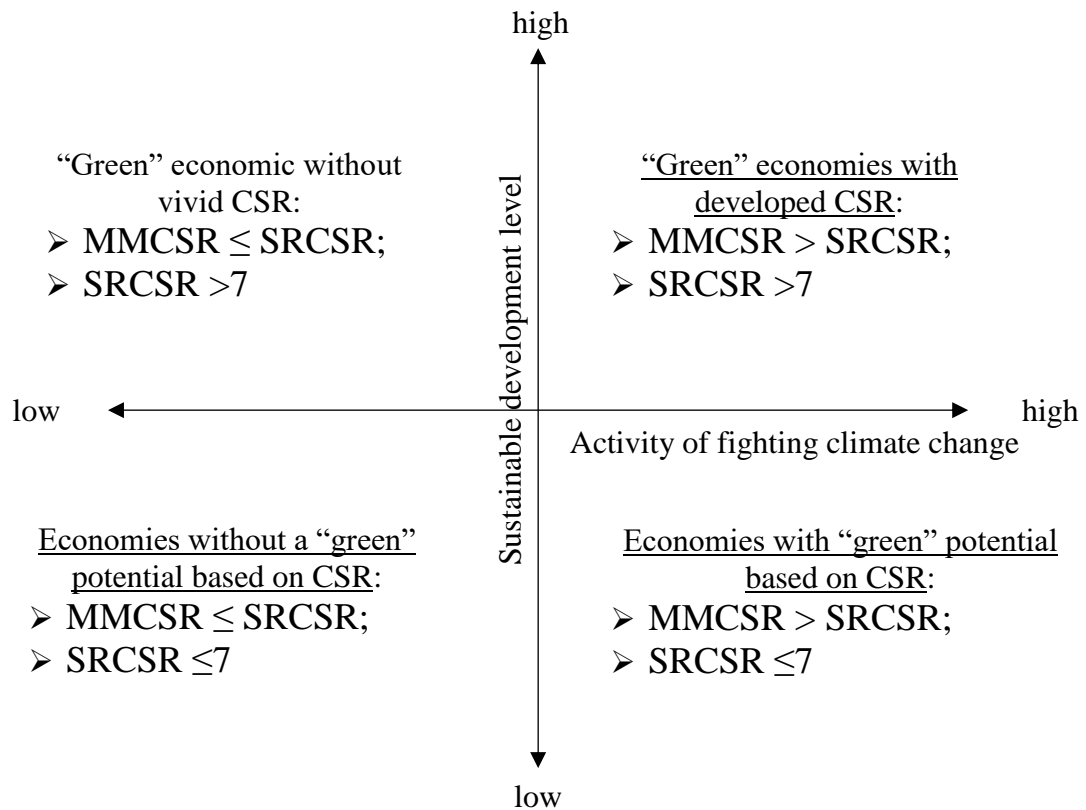


Figure 2. Scale for classifying countries by the criterion of sustainable development and fighting climate change.

Source: developed and compiled by the authors.

As shown in Figure 2, the offered classification uses the following control values of aggregate indicators:

- $MMCSR / SRCSR$ ratio;
- Value of SDFCC as compared to 7 (world average value of SDFCC).

If $MMCSR > SRCSR$ and $SDFCC > 7$, the country is in the category of “green” economies with developed CSR.

If $MMCSR \leq SRCSR$ and $SDFCC > 7$, the country is in the category of “green” economies without vivid CSR.

If $MMCSR > SRCSR$ and $SDFCC \leq 7$, the country is in the category of economies with a “green” potential based on CSR.

If $MMCSR \leq SRCSR$ and $SDFCC \leq 7$, the country is in the category of economies that do not have a “green” potential based on CSR.

Countries for which statistical data for calculating the aggregate and integral indicator are insufficient, belong to the category “other countries”.

As a result of classification, it is possible to see that no country belongs to the category of “green” economies without vivid CSR. This shows that the market mechanism is the basis of CSR management, and the state regulatory mechanism only supplements it.