

- SSI measures sustainability based on the Triple Bottom Line approach of Social, Environmental and Economic sustainability.
- The 2018 edition is based on data until 2016
- On a sustainability scale of 1(weakest) to 10 (strongest), the dimension representing global social sustainability, Human Wellbeing, scores highest, while Environmental and Economic Wellbeing lag behind.
- Across all dimensions, the global fulfillment of Basic Needs scores strongest (8), whereas climate protection and transition to a sustainable economic mode score lowest (<5).
- Over the reporting period 2006-20018 only the dimension of Human Wellbeing shows a continuous improvement
- 2018 scores confirm that economic and social sustainability are difficult to combine with environmental sustainability
- The negative link between income and environmental is strongest for the US and Sub Sahara Africa whereas Europe/Central Asia does not conform to this pattern.

Susann Kowalski, Wolfgang Veit

Version: November 2020

The document is available at: <https://ssi.th-koeln.de/publication.html>

## Introduction

The latest edition of the Sustainable Society Index (SSI) was published in August 2020. This report summarizes its main findings.

Production and publication of SSI has been taken over by TH Köln from the Dutch Sustainable Society Foundation.

SSI documents the sustainability profile of 154 countries/territories. The latest edition (2018) is based on data running up to 2016. Together with previous editions it provides an opportunity for cross-sectional and longitudinal analyses. This report will provide a brief overview of both perspectives. First, global developments will be described, followed by a presentation of individual sub-categories. Finally, sustainability scores by income group and region will be provided.

All data, as well as a large variety of country specific graphs and tables are available at <https://ssi.wi.th-koeln.de/index.html>.

## The Triple Bottom Line and the SSI

The SSI is structured along the lines of the Triple Bottom Line (TBL) of social, environmental and economic sustainability. In the well-established SSI-terminology this translates into Human Wellbeing (HUW), Environmental Wellbeing (ENW) and Economic Wellbeing (ECW), respectively.

HUW consists of three categories which are based on nine indicators. ENW consists of two categories based on seven indicators. Finally, ECW consists of two categories and five indicators (Table 1: SSI structure).

**SSI Structure**

Dimension	Category	Indicator
Human Wellbeing (HUW)	Basic Needs	Sufficient Food
		Sufficient Drinking Water
		Safe Sanitation
	Personal Development & Health	Education
		Healthy Life
		Gender Equality
	Well-balanced Society	Income Distribution
		Population Growth
		Good Governance
Environmental Wellbeing (ENW)	Natural Resources	Biodiversity
		Renewable Water Resources
		Consumption
	Climate & Energy	Energy Use
		Energy Savings
		Greenhouse Gases
		Renewable Energy
Economic Wellbeing (ECW)	Transition	Organic Farming
		Genuine Savings
	Economy	GDP
		Employment
		Public Debt

Table 1: SSI structure

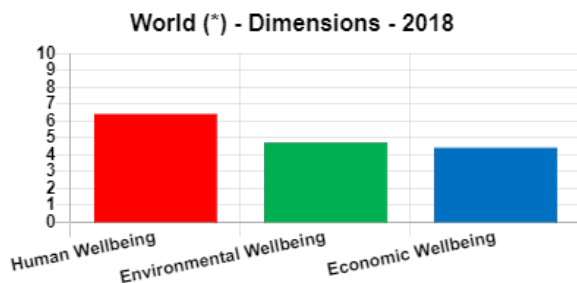


Figure 1: SSI dimension scores 2018

## 2018: Sustainability at a global level

On a world unweighted average, the three sustainability dimensions show different levels of accomplishment. While the social dimension, covering HUW, appears to be on a higher level (6.4), economic and environment sustainability are trailing behind with index scores of 4.4 and 4.7 respectively (Figure 1: SSI dimension scores 2018). This needs to be taken with a grain of salt, though: Variations in country performance are much higher within the social dimension, showing a standard deviation of 1.78, than within the environmental dimension (1.27). The economic dimension clearly is the laggard combining a low index value and the highest variability (1.8).

A first disaggregation of the data allows some distinctions. HUW is strongest in meeting basic needs and providing opportunities for personal development and health, while the countries' social structure appears to show considerable inequalities (Figure 2: HUW category scores 2018).

Similar differences can be found with regard to ENW. There, the protection of natural resources appears to be much better managed than the prevention of climate change (Figure 3: ENW category scores 2018).

The discrepancies are less pronounced with regard to ECW where countries on average show slightly better economic fundamentals, represented by the Economy category, but lack progress in the economic transition to a more sustainable mode of operation (Figure 4: ECW category scores 2018).

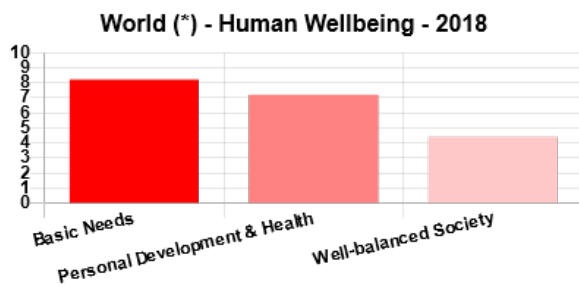


Figure 2: HUW category scores 2018

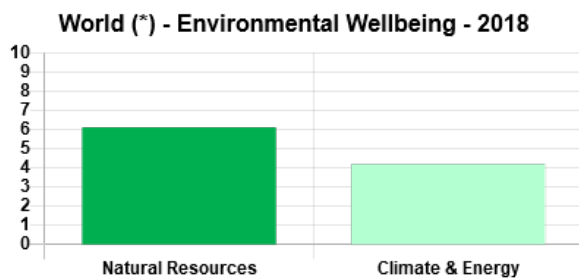


Figure 3: ENW category scores 2018

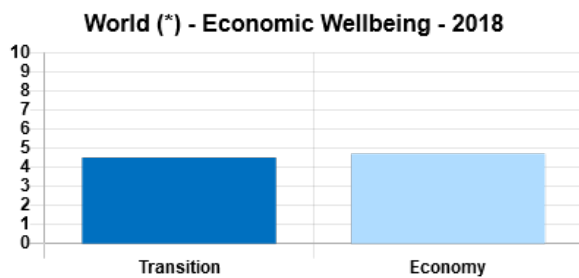


Figure 4: ECW category scores 2018

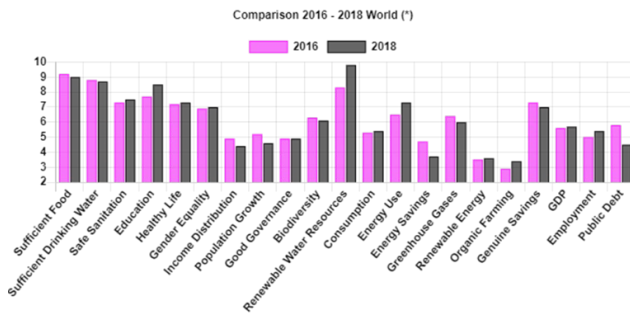


Figure 5: Comparison 2016 - 2018

## 2016 – 2018: Recent developments in Sustainability

Changes in sustainability scores since the 2016 SSI edition vary in strength and direction (Figure 5: Comparison 2016 - 2018).

Within the HUW, two of three indicators within the Basic Needs and Well-Balanced Society categories decreased, whereas all three indicators of the Personal Development & Health categories show moderate improvements.

Within the ENW dimension, progress was made in two of three indicators of the Natural Resources category, whereas the results in the Climate & Energy category are mixed and more on the negative side.

A similar picture emerges in the ECW dimension. There, within both categories opposing developments can be found.

Interpretation of the above described changes requires some caution, both for reasons of statistical validity and for reasons specific to the SSI structure. Statistical validity is discussed in the annex.

The SSI structure allows for compensation of changes within categories, resulting in dampened overall effects on the dimension values.

This dampened effect can be seen in Figure 6: SSI dimensions' long-term trends. The relatively strong improvement of individual indicators – described above – does not show in aggregate dimension values any more.

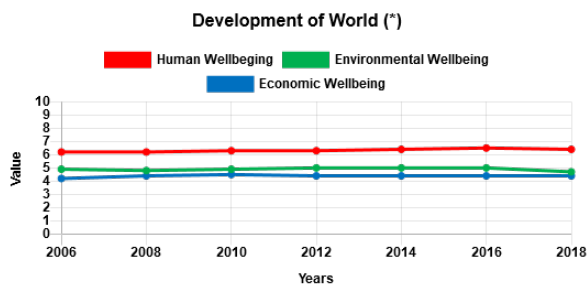


Figure 6: SSI dimensions' long-term trends

## 2006 – 2018: Trends in Sustainability

Over the past 12 years sustainability trends are divergent as the dimensions have moved – albeit slowly – in different directions. Two developments can be distinguished (Figure 6: SSI dimensions' long-term trends).

First, only the dimension of HUW shows a continuous improvement during those twelve years. This is remarkable considering the burden societies had shouldered during the international financial crisis around the end of the first decade.

Second, ENW shows a continuous steady decline. This is somewhat unexpected because signing of the Kyoto protocol in 1997 would have been expected to leave a mark in sustainability related policymaking. Even more so, the run up to the introduction of the SDGs and the signing of the Paris Agreement both occurred in the period in question.

Third, ECW reversed its initially positive development. Scores rose continually but declined almost to their initial levels towards the end of the twelve-year period. The international financial crisis and its aftermath of stabilization policies may have been determinants. The regional view of the Economy category supports this interpretation.

A closer look at each of the TBL-dimensions' drivers reveals a more detailed picture.

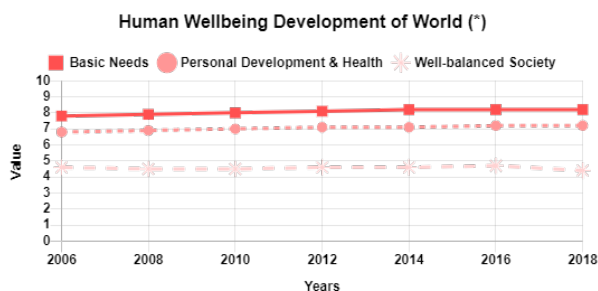


Figure 7: HUW long-term trends

The positive development of HUW can mostly be traced back to improvements in the meeting of Basic Needs and the conditions for Health and Personal Development (Figure 7: HUW long-term trends).

On the other hand, domestic economic inequality, a much-debated phenomenon over the period, shows a clear downward trend. It drags down the

otherwise positive performance of the HUW dimension. The opposing developments of Basic Needs and economic equality are somewhat surprising. An improvement in the former would be expected to yield improvements in the latter, too, as it is supposed to mostly benefit lower income groups.

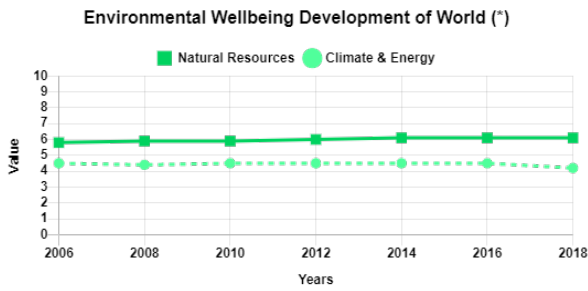


Figure 8: ENW long term-trends

The second TBL-dimension, ENW, shows diverging trends, too (Figure 8: ENW long term-trends). Whereas the employment of natural resources first improved and only towards the end of the twelve-year period declined, climate and energy indicators were moving in the opposite direction: an eight-year decline was followed by a recovery during the last four years. The latter category remained on a low level in absolute terms, though. Due to the higher weight of Climate & Energy indicators in the overall ENW dimension, ENW decreased.

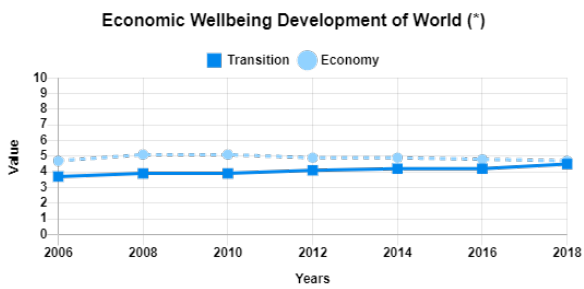


Figure 9: ENW long-term trends

Compared to ENW, ECW shows a slightly different development (Figure 9: ENW long-term trends). Here, efforts of transition towards a more sustainable economic mode have increased over the whole period, whereas standard macroeconomic measures of economic sustainability declined. Both categories have missed their targets by a wider margin than the two other dimensions, though. Again, the overall measure of ECW is dominated by the macroeconomic indicators which, in view of the international financial crisis' repercussions, explains the overall decline of this dimension.

Highest and Lowest Ranks in dimensions			
Rank	HUW	ENW	ECW
1	Finland	Zimbabwe	Qatar
2	Portugal	Burundi	Switzerland
3	Netherlands	Zambia	Singapore
4	Spain	Congo Democratic Rep.	Estonia
5	Denmark	Gabon	Czech Republic
6	Estonia	Niger	Trinidad and Tobago
7	Lithuania	Cuba	Germany
8	Slovenia	Central African Republic	Sweden
9	Germany	Malawi	Denmark
10	Latvia	Chad	Luxembourg
....	....	....	....
145	Sierra Leone	Australia	Liberia
146	Zambia	Japan	Burkina Faso
147	Togo	Saudi Arabia	Senegal
148	Congo	Iran	Bosnia-Herzegovina
149	Guinea-Bissau	Canada	Guinea-Bissau
150	Niger	United States	Gambia
151	Ethiopia	Turkmenistan	Zimbabwe
152	Papua New Guinea	United Arab Emirates	Mali
153	Chad	Korea, South	Burundi
154	Congo Democratic Rep.	Taiwan	Mozambique

Table 2: Country ranking by dimensions

## Country performance

As mentioned earlier, there are wide variations in the country sustainability performance. Ranking the countries with regard to their performance in the three SSI dimensions confirms the established view: HUW and ECW appear to be more easily attainable in democratic and/or high income countries (Table 2: Country ranking by dimensions).

ENW on the other hand is closely and negatively linked to economic activity: poorer countries perform better in this regard<sup>1</sup>, whereas dynamic and/or resource rich countries are at the bottom of the list.

Although not representative of the top and bottom half of countries, a closer look at the best and worst performers in every category confirms the divergence of dimension performance.

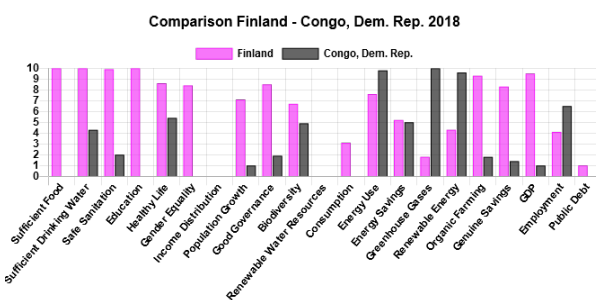


Figure 10: Comparison Finland-Congo D.R.

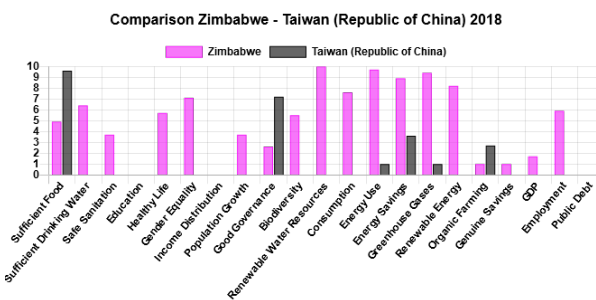


Figure 11: Comparison Zimbabwe-Taiwan

Finland and Congo D.R. serve as an example (Figure 10: Comparison Finland-Congo D.R.) They are at opposite ends regarding HUW. Out of nine indicators in this dimension, only one (“Healthy Life”) shows a less than 50% divergence between the two countries.

The dimensions ENW and ECW on the other hand show more similarities: there, four out of twelve indicators show a less than 50% divergence.

Taiwan and Zimbabwe serve as an example for bottom and top positions in the ECW league table (Figure 11: Comparison Zimbabwe-Taiwan). Unlike the previous case, divergences are much more clear-cut. Only in one out of twenty-one indicators is the divergence less than 50%, indicating that ENW is difficult to combine with the two other dimensions.

<sup>1</sup> This reflects the methodological approach of SSI, disregarding environmental efficiency of national production. An index of environmental performance relative to GDP is expected to change the picture. It will be provided in the upcoming SSI edition.

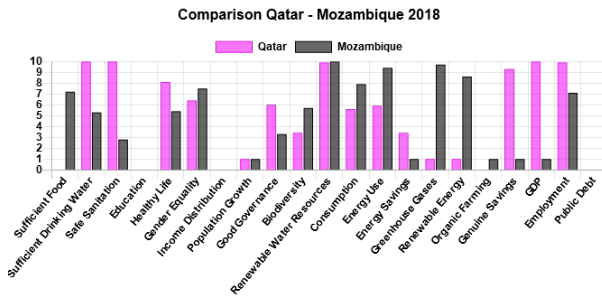


Figure 12: Comparison Qatar-Mozambique

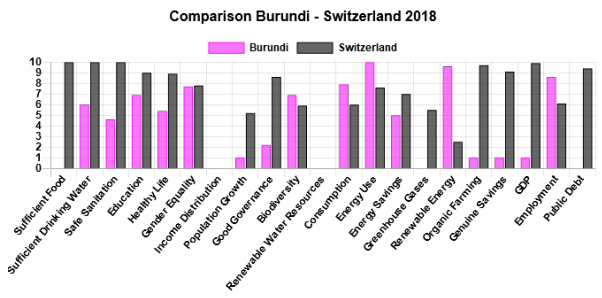


Figure 13: Comparison Burundi-Switzerland



Figure 14: HUW by income



Figure 15: Basic Needs by income

For ECW, Qatar and Mozambique are the candidates to compare (Figure 12: Comparison Qatar-Mozambique). At a first glance this dimension appears to be more easily to combine with a positive overall profile because performance is more balanced: 10 out of 21 indicators show a less than 50% divergence between the two countries. However, most of these similarities (8 out of 16) are located in HUW and ENW. The ECW dimension records only one in five close performances. In other words, ECW is at odds with both ENW and HUW.

When this stark contrast is double checked by comparing Switzerland and Burundi (Figure 13: Comparison Burundi-Switzerland), the second placed countries in the ECW dimension, the above results are confirmed: two thirds of available indicators in the HUW and ENW dimension show a less than 50% divergence. Within the ECW dimension, performances differ considerably between the strong and the weak performer: only one in four indicators is the difference less than 50%.

**Performance by income: HUW**

Top and bottom rankings show a clear distinction between high- and low-income countries. While higher income appears to be associated with high sustainability scores in the HUW and ECW dimensions, the opposite is true for ENW (Figure 14: HUW by income).

A closer look at sustainability performance by income classes leads to some qualifications, though.

The income-sustainability link is more pronounced in the Basic Needs category than in the other two categories (Figure 15: Basic Needs by income). Upper Middle- and High-Income countries are relatively advanced in this respect, while the lower income countries are lagging behind. The difference between lowest and highest scores is almost 50%.



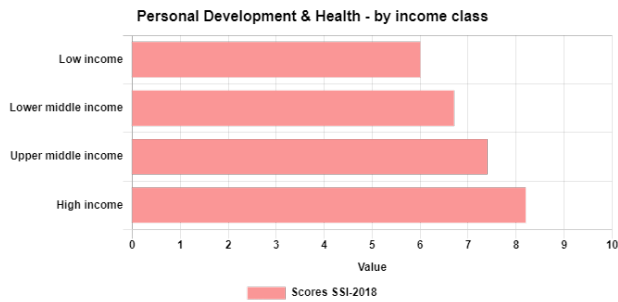


Figure 16: Personal Development and Health by income



Figure 17: Well Balanced Society by income

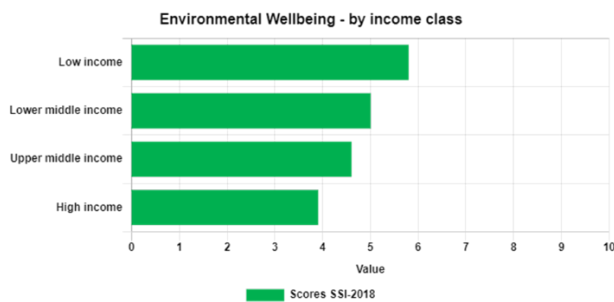


Figure 18: ENW by income

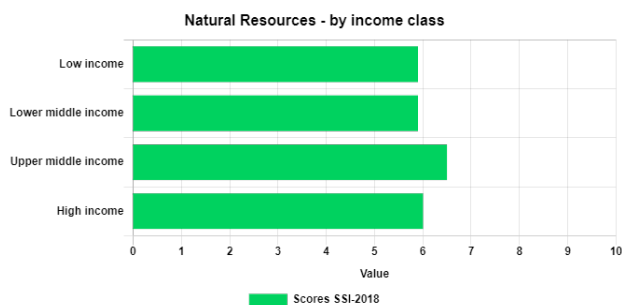


Figure 19: Natural Resources by income

Income seems to matter least when Personal Development and Health are concerned (Figure 16: Personal Development and Health by income). Here, the difference between highest and lowest score is roughly a quarter and scores are more centered.

Social equality, the third category in the HUW dimension, shows a different pattern again (Figure 17: Well Balanced Society by income). Here, high income countries appear to be more of an outlier while middle- and low-income countries are lagging. The difference between best and worst performing income group is roughly two thirds.

It should be noted, however, that performance in the Well-Balanced Society category is worse than that in the two other HUW categories for all income groups. This not only reflects the increasing political polarization in industrialized countries, but it indicates the potential for future tensions in less industrialized, lower income countries with a weaker institutional setting. For them, flattening the social pyramid while maintaining economic dynamism may become an uphill battle.

Compared to the two other dimensions, ENW performance shows a lopsided link between income and sustainability (Figure 18: ENW by income): low income countries appear to damage the environment much less than richer countries. As mentioned before, the efficiency of natural resource use is not considered in this measure.

### Performance by income: ENW

Within the ENW dimension, performance by income groups differs as much as within HUW. While the more qualitative indicators of the Natural Resources category show no clear distinction between income groups (Figure 19: Natural Resources by income), climate and energy issues increase with income (Figure 20: Climate and Energy by income). This result is somewhat surprising as the social relevance of qualitative improvements

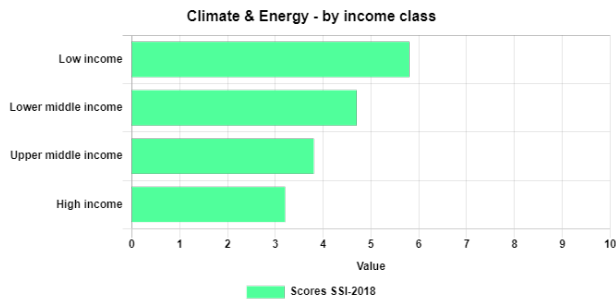


Figure 20: Climate and Energy by income

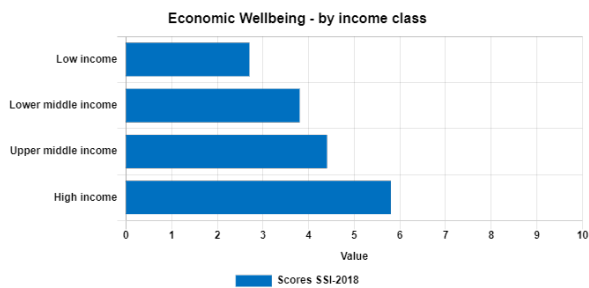


Figure 21: ENW by income

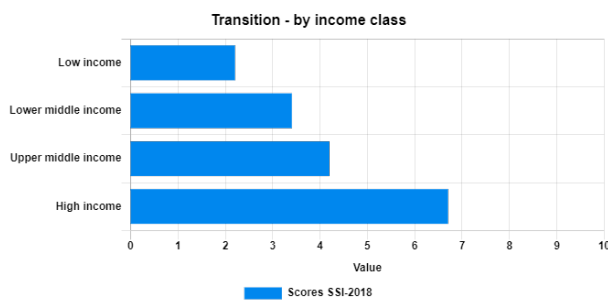


Figure 22: Transition by income

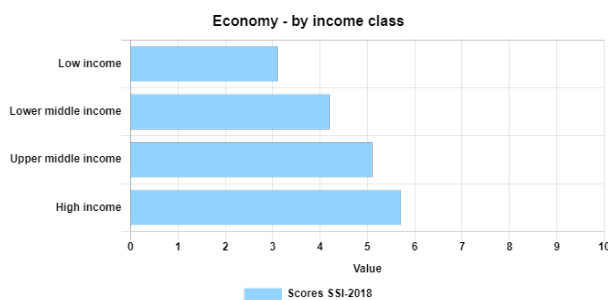


Figure 23: Economy by income

often is assumed to increase with income. This assumption may, however, ignore cultural heterogeneity among countries within the same income group, leading to different levels of appreciation of qualitative vs. quantitative improvements and/or growth. The empirical evidence of the popular Environmental Kuznets Curve<sup>2</sup> is controversial and our results do not confirm it, either.

### Performance by income: ECW

Regarding the ECW dimension, the score difference between the strongest and the weakest performing income groups is almost 50% (Figure 21: ENW by income).

Unlike the previously discussed sustainability dimensions, ECW does not show different sustainability patterns in its categories. Both the more static category of Economy and the more dynamic category of Transition indicate a clear association with income.

This link is more linear with regard to the static indicators where the score difference is roughly 50%. The Transition category shows a clearly superior performance of high-income countries (Figure 22: Transition by income). There, the score difference between lowest and highest income group is roughly two thirds.

This stronger performance of high-income countries might reflect the results of international agreements on environmental protection. They typically require these countries to reach more ambitious targets than the lower income countries. Even if the degree of the country specific targets were similar across all countries, this would result in a better score performance for the high-income group.

<sup>2</sup> Grossman and Krueger (1995)

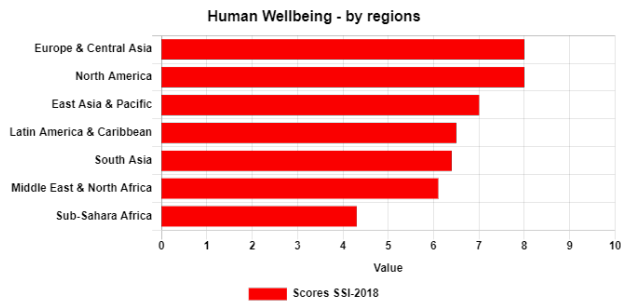


Figure 24: HUW by region

Income by regions*				
	2016	2017	2018	2019
Sub-Saharan Africa	3688	3754	3848	3919
South Asia	5455	5772	6194	6527
Latin America & Caribbea	15412	16061	16544	16797
East Asia & Pacific	15607	16334	17400	18443
Middle East & North Afric	15931	16574	17107	17471
Europe & Central Asia	32293	34070	35535	36828
North America	56778	58815	61542	63705

\* GDP per capita, PPP (current international \$)  
Source: World Bank, WDI

Table 3: Income by regions



Figure 25: Basic Needs by regions

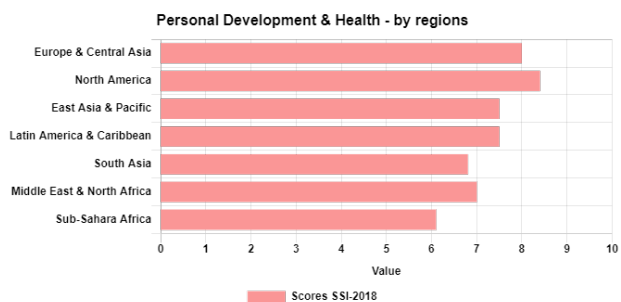


Figure 26: Personal Development and Health by regions

### Performance by region: HUW

The sustainability performance by regions roughly reflects the performance by income (Table 3: Income by regions). Regions dominated by high income countries perform better in HUW and ECW dimensions, whereas regions with mostly poorer countries are stronger in ENW (Figure 24: HUW by region; Figure 28: ENW by regions; Figure 31: ECW by regions).

This general conclusion deserves a closer inspection. Among the richer regions, North America and Europe/Central Asia score similarly with regard to HUW and ECW, but differ strongly in their ENW scores. In the latter, Europe/Central Asia, Sub-Saharan Africa, South Asia and Latin America/Caribbean are in the same league, despite considerable differences in per capita income.

While North America is an outlier in the ECW dimension, Middle East/North Africa is so in the two other dimensions. In those, this region is closer to low income regions, despite its comparatively high per capita income.

A closer look at HUW-categories confirms some of the previous conclusions. Poor regions perform worse, with Sub-Saharan Africa being the laggard. The discrepancy between this region and the rest of the world is most pronounced when it comes to Basic Needs (Figure 25: Basic Needs by regions), followed by Personal Development and Health (Figure 26: Personal Development and Health by regions) and social balance (Figure 27: Well-balanced Society by regions).

However, income does not appear to be the sole driver of social balance: in this regard South Asia is closer to the high-income countries' scores than to Sub-Saharan Africa, although it is much closer to the latter income wise. Again, other, e.g. cultural differences between Asia and Africa may play a role, a hypothesis somewhat supported by the rela-

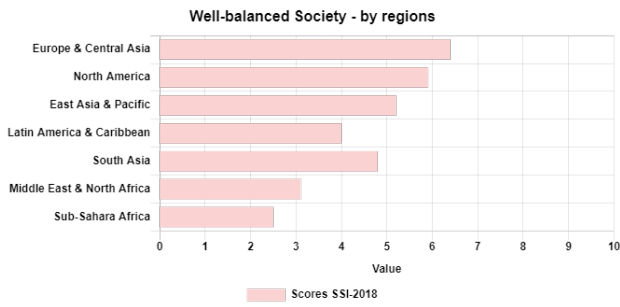


Figure 27: Well-balanced Society by regions

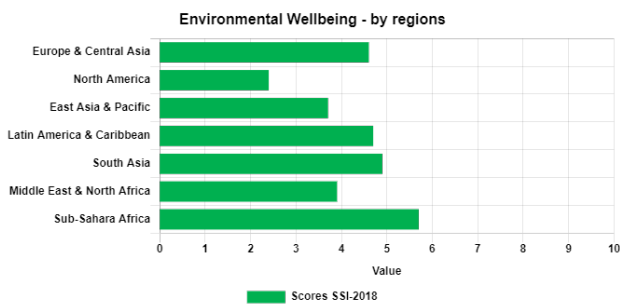


Figure 28: ENW by regions

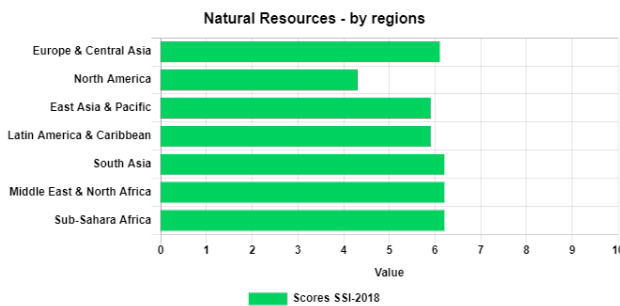


Figure 29: Natural Resources by regions

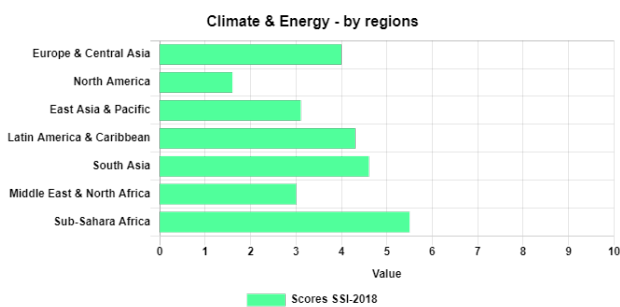


Figure 30: Climate and Energy by regions

tively homogeneous performance among the African regions on the one hand and among the Asian regions on the other.

Interestingly, the regional performance is most equal in the Personal Development and Health category (Figure 26: Personal Development and Health by regions). The score difference between weakest and strongest performer here is a mere quarter. The indicators in this category cover some of the core developmental goals of the recent decades. Is this a sign of one of the rare successes of development cooperation?

### Performance by region: ENW

Within the ENW categories, Natural Resources show the most equal regional performance of all SSI indicators (Figure 29: Natural Resources by regions). With the notable exception of North America, all other regions score between five and six. The score difference to North America is roughly a third. It should be noted that the repeal of environmental legislation during the Trump administration has not been accounted for in the data.

The second category Climate and Energy shows a similar picture (Figure 30: Climate and Energy by regions). Again, North America is the laggard, while Europe/Central Asia, South Asia and Latin America/Caribbean, despite very different income levels, score within short distance.

Also, Middle East/North Africa and East Asia/Pacific show comparable scores. These unexpected bedfellows in climate protection performance suggest a more thorough analysis. A breakdown by indicators shows equal scoring with regard to the CO<sub>2</sub> footprint (see Annex), but different scores in the other indicators that cancel each other out when aggregated into the category Climate and Energy.



Figure 31: ECW by regions

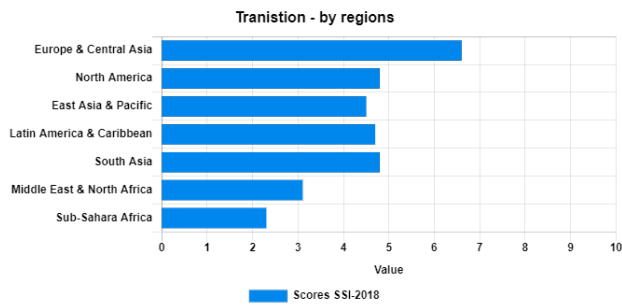


Figure 32: Transition by regions



Figure 33: Economy by regions

## Performance by region: ECW

The regional performance of the ECW category is quite balanced (Figure 31: ECW by regions). Rather than reflecting income differences, the scores appear to be aligned with regional institutional features. ECW is largely measured by macro- and microeconomic indicators. Successful implementation of economic policies requires consistent policymaking, which in turn is based on strong political and economic institutions. An adequate degree of democracy often helps, too. Seen from this institutional perspective, the weaker performance of the mostly African regions is not surprising, despite the recent progress made in this regard in a number of countries.

An almost similar picture can be seen when the Transition category is analyzed (Figure 32: Transition by regions). Three broad regional groups emerge: Europe/Central Asia scoring highest, African regions scoring lowest, and all other regions scoring more or less equally. Again, the rather reluctant push towards a more sustainable economic mode of the US is visible, scoring almost at par with South Asia and Latin America/Caribbean.

SSI measures an economy's sustainability (Figure 33: Economy by regions) by macroeconomic factors only. Stabilization programs of international economic organizations matter as much as strong and consistent growth and the institutional setting. This may be a reason why no clear regional pattern emerges in this category, with the exception of Sub Sahara Africa which scores with a clear distance to the next best region, South Asia.

## Conclusions

The Sustainable Society Index measures sustainability based on the Triple Bottom Line approach of Social, Environmental and Economic sustainability, its 2018 edition results being based on data until 2016. Longitudinal analyses indicate slow

---

change over the past 12 years, but statistical significance of the results is somewhat limited. With these reservations, the HUW dimension shows progress while the ENW and ECW dimensions almost stagnate over the long run.

The 2018 data reflect this longitudinal result: on a sustainability scale of 1 (weakest) to 10 (strongest), the HUW dimension scores highest, while ENW and ECW lag behind.

Across all seven sustainability categories, the global fulfillment of Basic Needs scores strongest (8), whereas climate protection and transition to a sustainable economic mode score lowest (<5). Classic development cooperation policies appear to have had a stronger effect than the internationally coordinated efforts in the area of environmental protection which coincided with the Kyoto protocol.

Both the longitudinal analysis and the 2018 scores confirm that economic and social sustainability are difficult to combine with environmental sustainability. This can be seen across most categories. From a regional point of view, the negative link between income and environmental sustainability persists. It is strongest for the US and Sub Sahara Africa. Latin America, Middle East/North Africa and Asia/Pacific hold the middle ground in both sustainability scores and income. Europe/Central Asia, belonging to the high-income country group, does not conform to this pattern: they score high in environmental sustainability despite their belonging to the highest income group.

The challenge ahead is the same for almost all countries: generate social and economic sustainability without compromising environmental sustainability.

---

## Annex

### Methodological and statistical notes

Data sources employed in the calculation of SSI scores and their calculation methods are documented on the website <https://ssi.wi.th-koeln.de/documents/item-berechnungen.pdf>.

This report provides an overview of the score change between the 2016 and 2018 SSI editions and it presents the status quo per the SSI 2018 in some more detail. When interpreting both score perspectives consideration of the following statistical qualifications is suggested.

The discussion of score changes between 2016 and 2018 does not reflect differing statistical validities of data (Figure 5: Comparison 2016 - 2018). Validity was checked by subjecting 2016 and 2018 scores to t-tests for related samples. This resulted in dimension changes that were not significant for HUW and ECW, but were significant for ENW. The following table reports the significant changes ( $p=0.000$ ) at indicator level:

Significant indicator changes			
Dimension	Category	Indicator (+)	Indicator (-)
HUW	Basic Needs	Safe Sanitation	Sufficient Food
HUW	Personal Development & Health	Education	
HUW	Well Balanced Society		Population Growth
ENW	Natural Resources	Renewable Water Resources	
ENW	Climate & Energy	Energy Use	Energy Savings
ECW	Transition	Organic Farming	
ECW	Economy	Employment	

Table 4: Significant indicator changes

Within categories ENW and HUW, there are significant indicator changes that do not lead to changes of their aggregated categories. This suggests that there may be mutually compensating effects of significant indicators which do not necessarily result in significant category changes. There, one pair of indicators each tends to compensate within the given category. The ENW dimension deteriorated overall, despite a ratio of significant positive to negative indicators of 2:1. This raises the question of causally related overcompensation of changes which has not been investigated in this paper.

For the detailed presentation of the 2018 edition scores it is important to note the difference in dispersion of country scores around the global average. The following tables provides descriptive statistics for these averages.

	Human Wellbeing			Environm. Wellbeing		Economic Wellbeing		Human Wellbeing	Environmental Wellbeing	Economic Wellbeing
	Basic Needs	Personal Development & Health	Well-balanced Society	Natural Resources	Climate & Energy	Transition	Economy			
	Categories							Dimensions		
Maximum	10.0	9.2	8.3	8.8	9.0	9.6	9.9	9.0	8.3	9.7
Unweighted country average	8.2	7.2	4.4	6.1	4.2	4.5	4.7	6.4	4.7	4.4
Minimum	2.3	4.2	1.1	1.1	1.0	1.0	1.4	2.5	1.5	1.6
Standard deviation	2.1	1.0	2.1	1.5	1.7	2.6	1.9	1.8	1.3	1.8
Coefficient of Variation	0.3	0.1	0.5	0.2	0.4	0.6	0.4	0.3	0.3	0.4

Within categories, there is a clear link between standard deviation and average. This finding is confirmed by the low coefficient of variance for high average categories Basic Needs and Personal Development & Health, whereas low average categories like Well-balanced Society, Climate & Energy and Transition show a much higher coefficient. No such pattern emerges for dimensions.

	Human Wellbeing									Environmental Wellbeing						Economic Wellbeing					
	Basic Needs			Personal Dev. & Health			Well-balanced Society			Natural Resources			Climate & Energy			Transition		Economy			
	Sufficient Food	Sufficient Drinking Water	Safe Sanitation	Education	Healthy Life	Gender Equality	Income Distribution	Population Growth	Good Governance	Biodiversity	Renewable Water Resources	Consumption	Energy Use	Energy Savings	Greenhouse Gases	Renewable Energy	Organic Farming	Genuine Savings	GDP	Employment	Public Debt
	Indicators																				
Maximum	10.0	10.0	10.0	10.0	9.4	8.7	9.6	10.0	8.7	10.0	10.0	9.9	10.0	10.0	10.0	9.6	10.0	9.6	10.0	9.9	9.7
Unweighted country average	9.0	8.7	7.5	8.5	7.3	7.0	4.4	4.6	4.9	6.1	9.8	5.4	7.3	3.7	6.0	3.6	3.4	7.0	5.7	5.4	4.5
Minimum	4.0	3.9	1.0	4.1	4.2	5.2	1.0	1.0	1.0	1.1	7.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Standard deviation	1.3	1.7	2.9	1.4	1.2	0.6	2.8	2.8	1.8	2.0	0.5	2.1	3.3	2.6	3.1	2.7	2.9	2.8	3.1	2.2	3.3
Coefficient of Variation	0.1	0.2	0.4	0.2	0.2	0.1	0.6	0.6	0.4	0.3	0.1	0.4	0.4	0.7	0.5	0.8	0.8	0.4	0.5	0.4	0.7

A similar picture emerges for the indicator level. Here, high average scores show a lower dispersion, as measured by the coefficient of variation, than lower average scores, with Sufficient Food and Gender Equality representing the extremes. The one exception is Safe Sanitation which, despite a high average score shows an unusually high standard deviation. Summing up, interpreting average scores on the indicator and category level should consider dispersion of country values around the global average, the more so the lower the average.



---

## List of references

Grossman, G. and Krueger, A. 1995. Economic growth and the environment. Quarterly Journal of Economics 110, 353–77.

## List of tables

Table 1: SSI structure.....	2
Table 2: Country ranking by dimensions .....	7
Table 3: Income by regions.....	11
Table 4: Significant indicator changes .....	15

## List of figures

Figure 1: SSI dimension scores 2018 .....	2
Figure 2: HUW category scores 2018 .....	3
Figure 3: ENW category scores 2018.....	3
Figure 4: ECW category scores 2018 .....	3
Figure 5: Comparison 2016 - 2018 .....	4
Figure 6: SSI dimensions' long term trends.....	5
Figure 7: HUW long-term trends .....	5
Figure 8: ENW long term-trends.....	6
Figure 9: ENW long-term trends.....	6
<i>Figure 10: Comparison Finland-Congo D.R.</i> .....	7
Figure 11: Comparison Zimbabwe-Taiwan.....	7
Figure 12: Comparison Qatar-Mozambique.....	8
Figure 13: Comparison Burundi-Switzerland.....	8
Figure 14: HUW by income.....	8
Figure 15: Basic Needs by income .....	8
Figure 16: Personal Development and Health by income.....	9
Figure 17: Well Balanced Society by income.....	9
Figure 18: ENW by income .....	9
Figure 19: Natural Resources by income.....	9

---

Figure 20: Climate and Energy by income .....	10
Figure 21: ENW by income .....	10
Figure 22: Transition by income .....	10
Figure 23: Economy by income .....	10
Figure 24: HUW by region .....	11
Figure 25: Basic Needs by regions .....	11
Figure 26: Personal Development and Health by regions .....	11
Figure 27: Well-balanced Society by regions.....	12
Figure 28: ENW by regions .....	12
Figure 29: Natural Resources by regions.....	12
Figure 30: Climate and Energy by regions .....	12
Figure 31: ECW by regions.....	13
Figure 32: Transition by regions .....	13
Figure 33: Economy by regions .....	13

---

© Susann Kowalski, Wolfgang Veit

Contact:

[susann.kowalski@th-koeln.de](mailto:susann.kowalski@th-koeln.de)

[wolfgang.veit@th-koeln.de](mailto:wolfgang.veit@th-koeln.de)