NETGREEN

Network for Green Economy Indicators

Brief on Policy recommendations for Research

Deliverable 4.4

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SEVENTH FRAMEWORK PROGRAMME

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LIST OF ABBREVIATIONS

EU	European Union
NGO	Non-governmental organisation
OECD	The Organisation for Economic Co-operation and Development
UN	United Nations
UNEP	United Nations Environmental Program
WP	Work Package

Executive summary – Recommendations for further development of the tool

This report depicts the scope of the NETGREEN project and its final output: www.measuring-progress.eu, an interactive tool for the identification and the choice of green economy indicators.

The document uses the overview on scope and a gap analysis to provide some recommendations for the further development of the website. 'Gaps' refer in this context to missing keywords, which are used to identify indicators, as well to the geographical coverage of the data. To present gaps and future possibilities of this project and tool, the database is presented and analyzed extensively. To analyse the gaps of this databank, the policy topics and its keywords and indicators are listed. But not only in its thematic content (2.2 and 2.3), but also in its geographical coverage the database was analysed (2.4.).

It was found, that the most content-wise gaps are in the field of "economic sustainability and resilience". Since this field has a lot of categories and aspects, gaps are very likely. Keywords that are missing are e.g. Circular Economy, Production patterns (Sustainable Production is included) and Transactions costs.

While analyzing the geographical coverage, the strong focus on the European Union became evident. In order to provide a more complete picture of Green Economy data and its indicators, more data from the Global South could be added. To include current and upcoming trends in environmental, economic and social policy making, new keywords could be integrated and be linked to the respective data.

Since the objective of Measuring Progress is to empower the users through a high usability and an interactive design, the users were not only likely to use the tool, but also to provide feedback. This feedback was collected and analysed, systematically clustered and summarized for this report. Positive feedback was, for example, the abundant information about the annotated indicators. Providing this information, every user can answer the upcoming questions, which differ significantly respectively the user's background. Missing keywords or data were mentioned in negative feedback, highlighting the importance to fill the gaps.

This document ends with research recommendations and future possibilities on how to further develop the www.measuring-progress.eu tool. These recommendations describe which additional information and features could make the website even more useful to more users. It is worth noting that the website covers a substantial range of indicators but the changing policy questions and agendas mean that the website needs to be kept up to date to stay useful and to become more so. The website provides support in thinking about the best indicators for the specific policy question of the user and

extending the website with keywords and indicators linked to the circular economy and the UN SDGs will increase its power to support thought processes on monitoring and indicators even more.

1 :: Introduction

1.1 NETGREEN and the role of this report

The NETGREEN consortium created an online tool and database called Measuring Progress which enables policy-makers, decision makers, and other stakeholders to identify and understand the best suited indicators to measure progress towards the green economy. The indicator selection process helps the users establish links between the environmental, economic and social issues that pose challenges measuring the green economy. The online tool offers the indicators that meet the needs of generalists without deep expertise in the field, as well as of specialist policy-makers who want to understand the broader issues around the green economy.

The Measuring Progress tool helps to translate a policy outcome, objective or issue into a pre-selection of indicators that can be used to explore and analyse the challenges that arise from the policy process. The website allows the user to combine different ways to search for indicators. This includes a free text search to allow users with different backgrounds to use the website in a way that is intuitive for them. For each identified indicator, the tool provides the necessary information to facilitate the selection process. To increase the usability and tool relevance, the website was developed in close interaction with potential users.

Measuring Progress does not only help the user in identifying the suitable indicators, it also helps understand the results of indicators proposed. To achieve that, the user is able to see technical information and links to the real data. Most importantly, the database gives support to policy-makers in interpreting results, pointing out pitfalls and providing further indicator suggestions, which is crucial to understand alternative viewpoints and considerations. With this, the tool contributes to broaden the viewpoint of users that have the ambition to design policies on a general set of objectives related to the green economy. Further details on the project and the website can be found on http://netgreen-project.eu/. The tool can be found at http://measuring-progress.eu.

Measuring Progress allows the user to search for the indicators that are most relevant to the relevant policy issues. The user may specify several characteristics about indicators such as: (i) the policy issue they are concerned about (e.g. green economy, sustainable development), what type of indicator (e.g. indicator set, composite indicator), and what temporal coverage they desire (e.g. historical, current, forecast). This website enables users to find

available indicators using different criteria (theme, methodology, indicators used/developed and many others). For each of the indicators this website also provides a link to the main websites that have available data for the indicators.

To create the website the following stages have been developed:

1. Transferring the structure and classification developed in Task 3.1 into a relational database architecture, which matches the framework of the content management system in use. Based on the user requirements the database concept has been developed, specifying data fields, data types, keyword vocabularies, properties and relations of the different contents.
2. Development of the protocols for the database entry points: this has allowed the development of a framework for the project team to input the required information about indicators in a consistent way. One particular aspect of this step was the development of the protocol to attribute a scoring system to the relation between the policy outcomes described in the mind map and each of the indicators in the database. This was developed by a method of consistency check of the scores assigned to each lead indicator in relation to policy outcomes.
3. Populate the database with the information collected based on the protocols for the database entry points. This includes many fields such as description of the indicator, type of indicator, links to available data, type of indicator source and developer, geographic coverage frequency of updates, methodological assessment, relationship between indicators, among many other aspects.
4. Testing the website. This step has been done interactively in several levels of testing, from the adequacy of the database entry points' protocol to the usability of the website, which ensure the adequate operation of all the features in the website.

1.2 Objectives of this gap and recommendations report

This report has the following main objectives:

1. To perform a database content analysis to evaluate if the indicators for the green economy present in the database are representative of the policy issues that were identified and structured in the mind map.
2. To perform an assessment of the degree of representation of the issues detailed in the decomposition of the policy outcomes (4th level of the mind map)

3. To compare the database contents (in terms of keywords and indicators) with the concerns and issues mentioned in a representative sample of high level policy guidance documents from major international institutions and in some national policies identified within the countries of the project's partnership.
4. To collect and analyze the input and review that the user group has performed on the measuring-progress.eu database.
5. To develop a set of **policy recommendations for research** that stems from the gap analysis exercise, which can provide important recommendations for the EU policy and research agenda for Green Economy indicators.

The database and website developed has been evaluated by a gap analysis, to determine the way keywords and indicators can actually measure the progress compared to the objectives of the identified policies and strategies. These main current policy topics and strategies have been identified in an analysis of websites and documents from the main international organizations, national policies, as well as those from previous interviews. The perspective of the gap analysis is to develop and outlook on opportunities for further development of the NETGREEN database and website.

This report presents the main results of the gap analysis and provides a set of policy recommendations that derive from the latter. The work developed in the gap analysis has allowed for the identification of areas that are less covered in the NETGREEN database, as well as opportunities to develop indicators and measurement systems to provide coverage for the topics that are less covered.

The policy recommendations represent practical recommendations for EU policy that are gathered from the inventory database, indicator structure (typology), website, workshops, interviews and other interactions with stakeholders.

The key purpose of the policy and study recommendations is to use the results of the gap analysis to spot the most promising opportunities for further development. The recommendations should not provide an ex post assessment of the content but should provide ideas what additional benefits could be garnered from extensions and modifications of the website.

Hence, the recommendations focus on filling the content-wise gaps (new policy trends) and gaps of geographical coverage.

1.3 Report's structure

This report offers a gap analysis, as well as the policy and study recommendations.

Section 3 present the results of the database content analysis to evaluate if the indicators for the green economy present in the database are representative of the policy issues that were identified and structured in the mind map developed in task 3.2.

Section 4 presents the results from the input that the user group provided to the database content and structure.

Section 5 presents the Recommendations for Research which is intended to structure the input from the gap analysis in a set of policy recommendations for research (still to be defined)

2 :: Database analysis

2.1 The thematic structure

The database analysis is based on the structure of the policy outcomes in the form of a mind map, as well as in a set of policy topics that have allowed identifying and collecting a set of keywords and indicators. These are obtained from the main current policy topics, which are a representative sample of high level policy guidance documents from major international institutions, as well as some national policies identified within the countries of the project's partnership.

2.1.1 The mind map

The mind map is a central part of the database. By linking the different entries (indicators, policy keywords) to the policy outcomes, the mind map is used to create systematic links, which are reproducible and consistent.

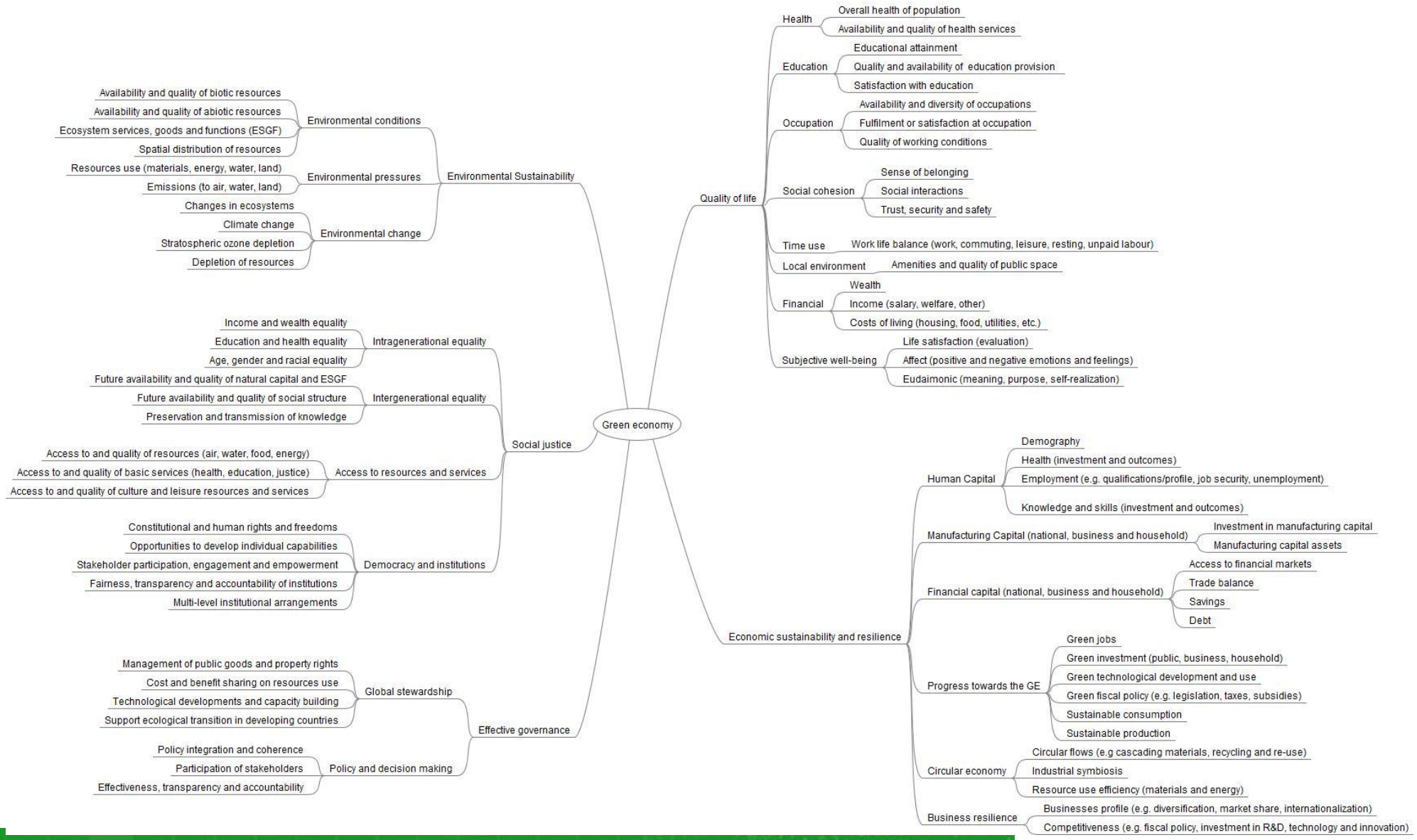
The user of the NETGREEN database is able to obtain suggestions for indicators by using policy keywords, free text search or by navigating in the policy outcomes tree that the mind map represents. Taking this into account the database has been developed in a way that establishes links between the policy outcomes represented in the mind map both with the keywords and the indicators.

These links have been established in a scoring system that gives a higher score to a stronger relationship between the keyword with the policy outcome, and the same thing goes for the link between indicators and policy outcomes. As in any search system the higher the score, the higher the indicator will be displayed in the list.

The approach taken means that the user of Measuring Progress will obtain a list of suggestions independently of the entry mode chosen (keywords, full text search or policy outcomes selection).

Figure 2.1 displays the latest version of the mind map developed by the NETGREEN team.

Figure 2-1 The policy outcomes represented in the form of a mind map



2.1.2 The policy topics

The identification and collection of a set of keywords and indicators from the main current policy topics, was performed by a selection of a representative sample of high level policy guidance documents from major international institutions, as well as some national policies identified within the countries of the project's partnership.

Tables 2.1 and 2.2 present the set of policy topics and sub-topics, identifying the institutions and the links to documents and websites.

Table 1.1 Policy topics and sub-topics from international institutions

International Policies		
Institutions	**Topics**	**Sub-topics**
European Commission	**Europe 2020: a strategy for European Union growth**	Europe 2020:strategy
		Green Action Plan for SMEs
	Energy Union	secure, sustainable, competitive, affordable energy for every European
	Circular Economy	A zero waste programme for Europe; A circular economy in support of sustainable growth
	jobs, growth and investment	EC priority: Infrastructure – broadband, energy networks and transport infrastructure Education, research and innovation Renewable energy and energy efficiency
European Commission	**Justice and Fundamental Rights**	support rights defense for citizens and companies in the EU; - crime, human trafficking, smuggling, cybercrime and corruption; - promoting the Convention of Human Rights; - protection of EU citizens' personal data; - discrimination
UNEP	**United Nations Environmental Program**	Resource efficiency Ecosystems management Climate Change Environmental Governance

International Policies		
Institutions	**Topics**	**Sub-topics**
European Commission	**Europe 2020: a strategy for European Union growth**	Europe 2020:strategy
		Green Action Plan for SMEs
	Energy Union	secure, sustainable, competitive, affordable energy for every European
	Circular Economy	A zero waste programme for Europe; A circular economy in support of sustainable growth
	jobs, growth and investment	EC priority: Infrastructure – broadband, energy networks and transport infrastructure Education, research and innovation Renewable energy and energy efficiency
UN	**Millennium Development Goals (MDGs)**	poverty and hunger universal primary education gender equality child mortality maternal health fight diseases environmental sustainability global partnership for development
FAO	**Sustainable food production**	Food security Sustainable agriculture Food Loss and Food Waste Genetic resources Right to Food
OECD	**Green growth and sustainable development**	Consumption, innovation and the environment Economic policies to foster green growth Environmental policy tools and evaluation Fisheries Greening cities, regions and communities Green growth and development Greening energy Greening jobs and skills Greening transport Sustainable agriculture

International Policies		
Institutions	**Topics**	**Sub-topics**
European Commission	**Europe 2020: a strategy for European Union growth**	Europe 2020:strategy
		Green Action Plan for SMEs
	Energy Union	secure, sustainable, competitive, affordable energy for every European
	Circular Economy	A zero waste programme for Europe; A circular economy in support of sustainable growth
	jobs, growth and investment	EC priority: Infrastructure – broadband, energy networks and transport infrastructure Education, research and innovation Renewable energy and energy efficiency
UN-SDGs	**The United Nations Sustainable Development Goals (SDGs)**	Poverty eradication food security sustainable agriculture wellbeing inclusive and equitable quality education gender equality availability and sustainable management of water and sanitation access to affordable and sustainable energy for all inclusive and sustainable economic growth reduce inequality
GGKP	**Green Growth Knowledge Platform (GGKP)**	environmental policies economic performance developing countries competitiveness, productivity and growth
European Commission	**EU Water Alliance**	sustainable management of Europe's water resources
The Green Growth Group	**Going for Green Growth: The case for ambitious and immediate EU low carbon action**	low carbon economy low carbon energy investments energy security decarbonisation

International Policies		
Institutions	**Topics**	**Sub-topics**
European Commission	**Europe 2020: a strategy for European Union growth**	Europe 2020:strategy
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	Circular Economy	A zero waste programme for Europe; A circular economy in support of sustainable growth
	jobs, growth and investment	EC priority: Infrastructure – broadband, energy networks and transport infrastructure Education, research and innovation Renewable energy and energy efficiency
EUROPEAN COUNCIL	**Social justice**	Social Cohesion Development and Research Social Security Access to Social Rights Social Policy for Families and Children Protection and promotion of human rights

Table 2.2 Policy topics and sub-topics from national policies

National Policies	
Country	**Policy**
Belgium	The Flanders Government Green Economy initiative
Germany	Green Economy in Germany German contribution to Green Economy Development in the Caribbean
Netherlands	The Netherlands Government Green Growth Strategy
Portugal	Green Growth action plan from the Portuguese government
United Kingdom	Green Economy Council Sustainability Strategy National Wellbeing Programme

2.2 Methodology

The main objective of the gap analysis is to develop and outlook on opportunities for further development of the NETGREEN database and website. The NETGREEN database consists of more than 263 annotated key indicators which cover the five main topic areas of the green economy identified in the mind map: environmental sustainability, social justice, quality of life, economic sustainability and resilience, and effective governance. In the process of selecting the indicators for the database there was an effort to have a balanced coverage of the five main topic areas, as well as coverage of all the sub-topics represented in the mind map. There was also the concern to have preferably indicators that are representative of several aspects of the green economy, instead of very specific indicators can only represent one aspect, meaning that indicators that have links to two or more sub-topics of the mind map were prioritized. However, in some cases there are also indicators that are very relevant in the context of the green economy despite the fact that only address one sub-topic of the mind map.

Beside the key indicators, 2032 indicators are listed in the database. These indicators are also connected to the key indicators, as for example as related indicators or indicators that help to avoid misinterpretations.

Starting from an initial set of more than 2000 indicators that were identified in work package 2, there was selected selection to only keep indicators that satisfy the following main characteristics: indicators that are representative of the main topics of the mind map, indicators that are currently in used by

statistical offices, indicators that have a clearly defined and consistent methodology, indicators for which there are available data in reliable databases.

The methodology followed in the gap analysis has the main objective of evaluating the outcome of the process of building the database, to assess possible gaps that may exist regarding several aspects associated with a database of this nature, such as: if all the topics and sub-topics represented in the mind map are being covered by keywords and indicators, what is the distribution of the scores given to the indicators, if the main keywords and aspects to measure mentioned in the high level policy guidance documents are represented in the database, among others.

To methodology of the gap analysis was developed in the following stages:

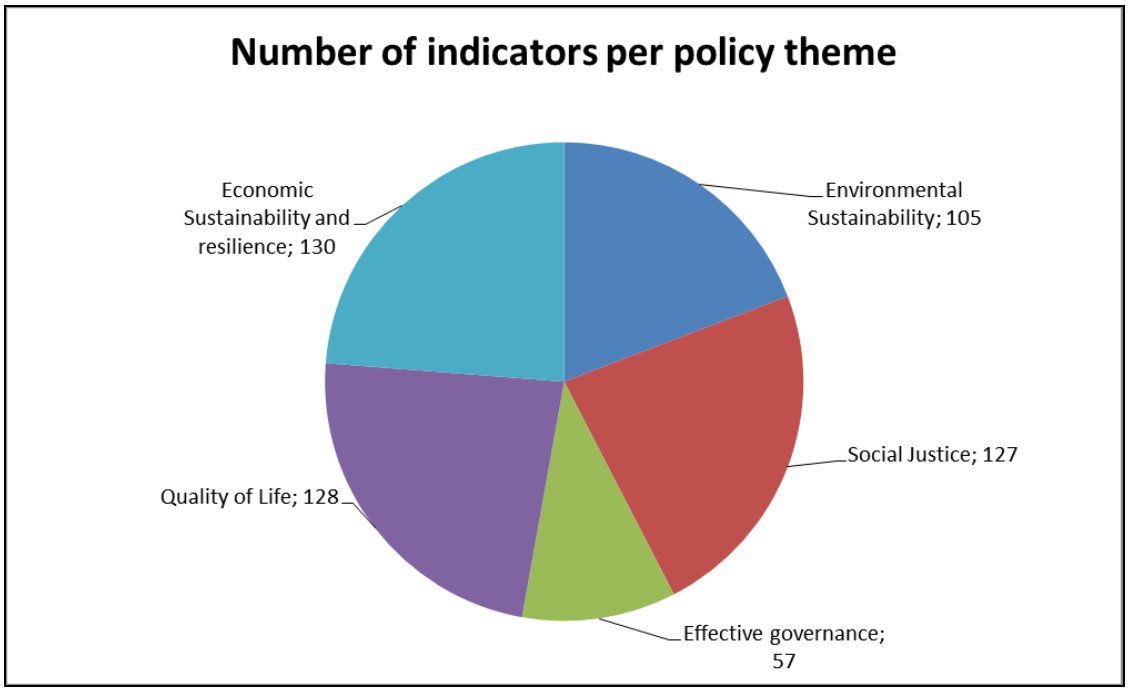
1. Identify and collect of a set of keywords and indicators from the main current policy topics, which were identified in an analysis of websites and documents from some of the main high level policy oriented international organizations, national policies, as well as those from previous interviews performed in tasks 2.1 and 3.2
2. Collect and analyse the information provided by the NETGREEN usergroup and other users of the website;
3. Determine if the keywords and the indicators, related to specific policy issues, are present in the measuring-progress.eu database;
4. Analyse of the way policy outcomes are being covered by indicators, by accounting the number of indicators and the respective scores for each policy outcome;
5. Analyse keywords and indicators related to specific policy issues associated with the policy outcomes.

2.3 Database content analysis

This section present the results of the database content analysis to evaluate if the indicators for the green economy present in the database are representative of the policy issues that were identified and structured in the mind map developed in task 3.2. For this purpose the main aspects of the database content are evaluated: distribution, representativeness and gaps between indicators and policy outcomes. This is based on the analysis of scores, which can provide information such as: number of indicators per each level of the policy outcomes; less covered policy outcomes such as those identified by the lower percentages in each level of the mind map (n. of indicators) and policy issues with no indicators with a 3 score (0 in 3 score), which provides information whether the link is weak or strong.

Figure 2-2 represents the distribution of indicators across the five main policy themes. Figures 2-3 to 2-7 represent the number of indicators and scores for each of the five main policy themes.

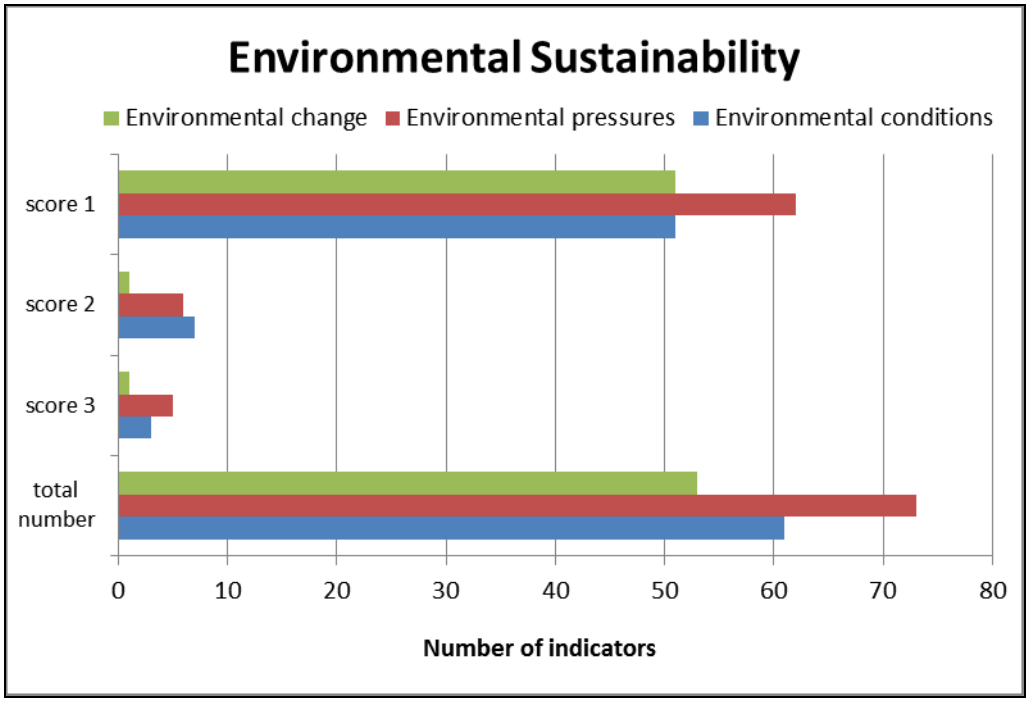
Figure 2-2 The distribution of indicators across the five main policy themes



Analysing Figure 2-2 there is a somewhat balanced representation the five main policy topics by the indicators in the NETGREEN database. More specifically, there is very good representation in three of the themes: economic sustainability and resilience, quality of life and social justice. Environmental sustainability is a little less represented, and effective governance is the theme

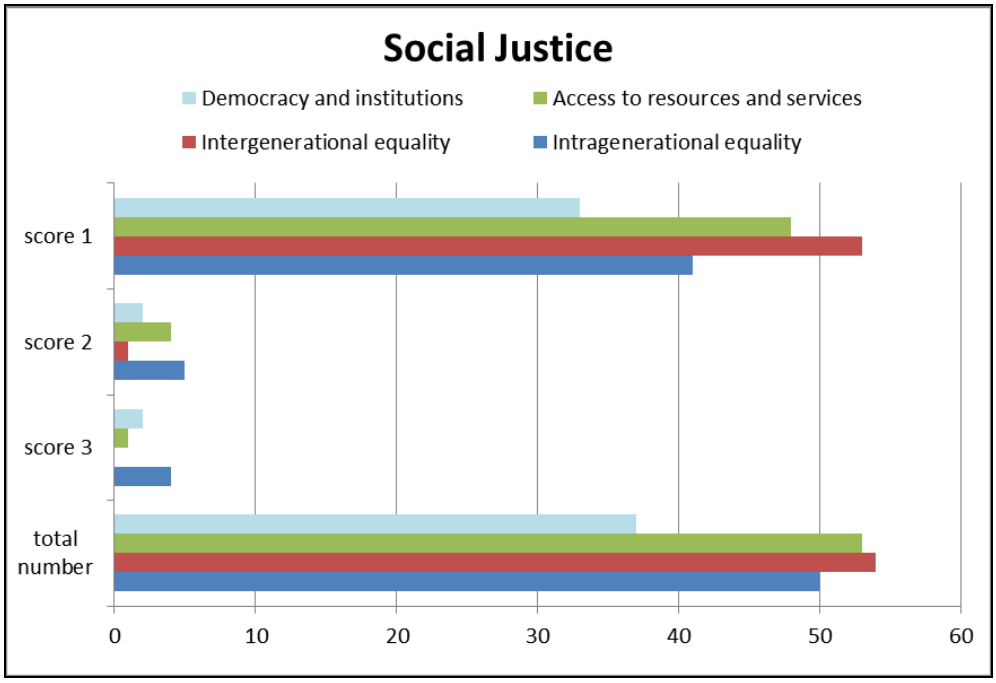
with the least indicators. This stems from the fact that there are fewer indicators in the governance theme; despite the fact that the two main policy outcomes in the second level of the mind map for effective governance (global stewardship and policy and decision making) are very frequently mentioned in many reports and policy guidance documents, this area is somewhat less developed in terms of indicators and there are in fact fewer indicators that address the sub-topics of governance. These are very important issues for policy and decision-making, however some of the issues are somewhat subjective and difficult to measure.

Figure 2-3 Number of indicators and scores for the Environmental Sustainability theme



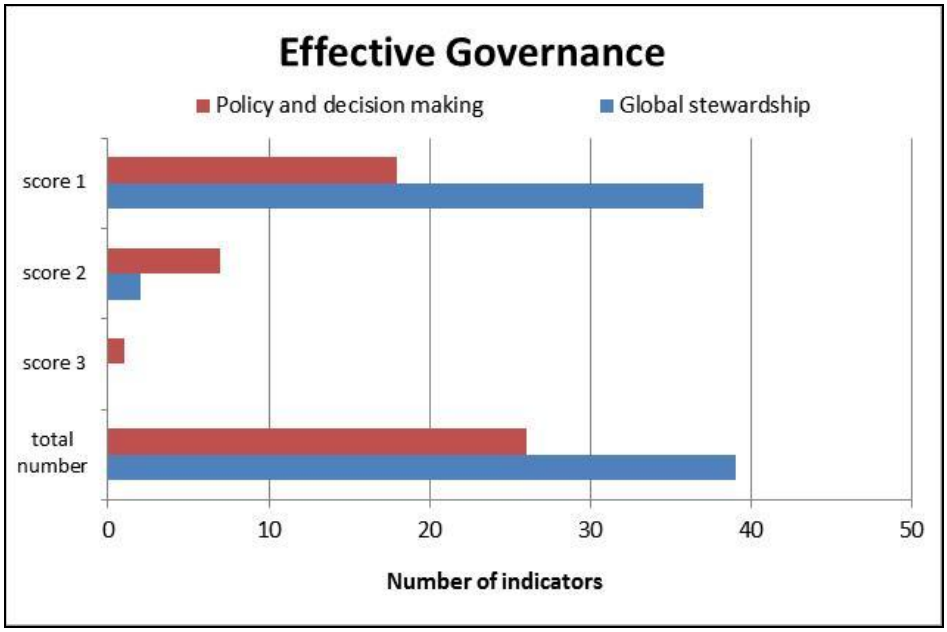
The main message that we can take from figure 2-3 is that in the NETGREEN database there is a slightly higher number of indicators for environmental pressures than there are for environmental change and environmental conditions. Making an analogy with the Pressure-State-Response Framework it is understandable that the first indicators developed are pressure indicators, then state or condition indicators and then response or change indicators. In a similar way, this is reflected in the number of indicators available, recognized and used to characterize environmental sustainability.

Figure 2-4 Number of indicators and scores for the Social Justice theme



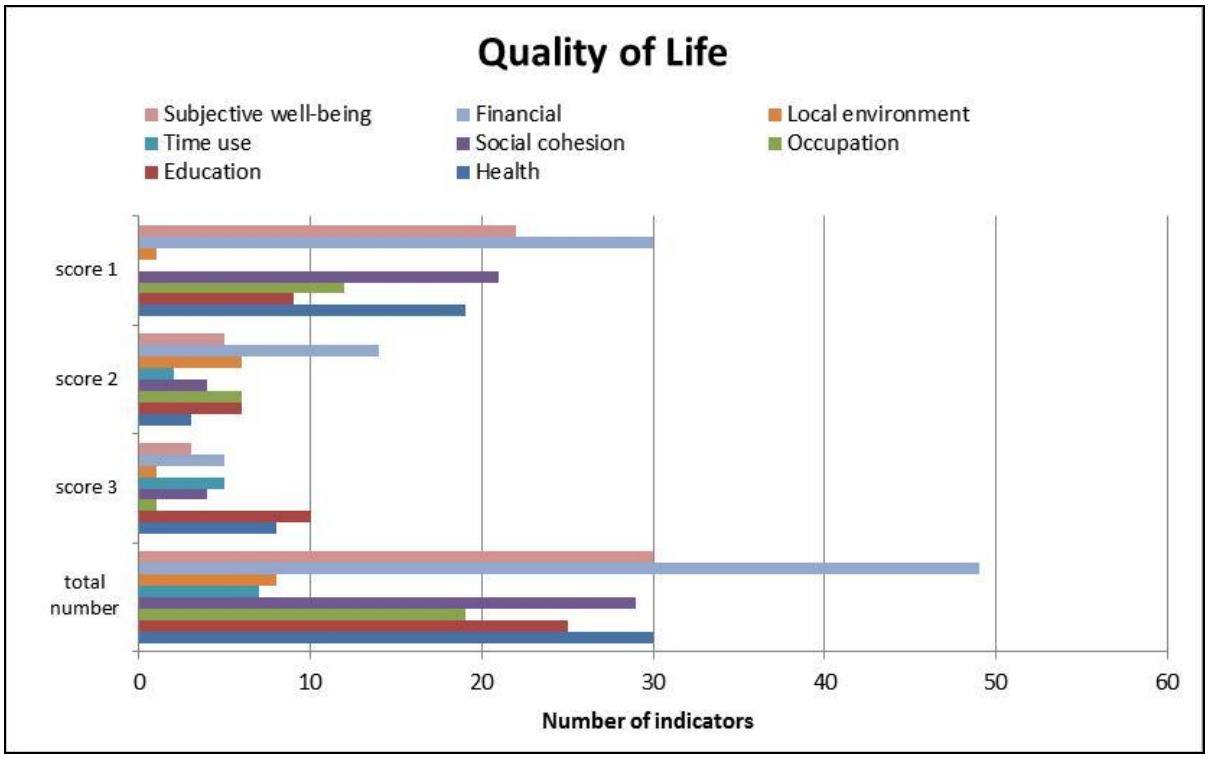
The main message that we can take from figure 2-4 is that there is a balanced number of indicators for three of the topics except for the topic democracy and institution. Making an analogy with the Pressure-State-Response Framework it is understandable that the first indicators developed are pressure indicators, then state or condition indicators and then response or change indicators. In the same trend, this is reflected in the number of indicators available, recognized and used to characterize environmental sustainability.

Figure 2-5 Number of indicators and scores for the Effective Governance theme



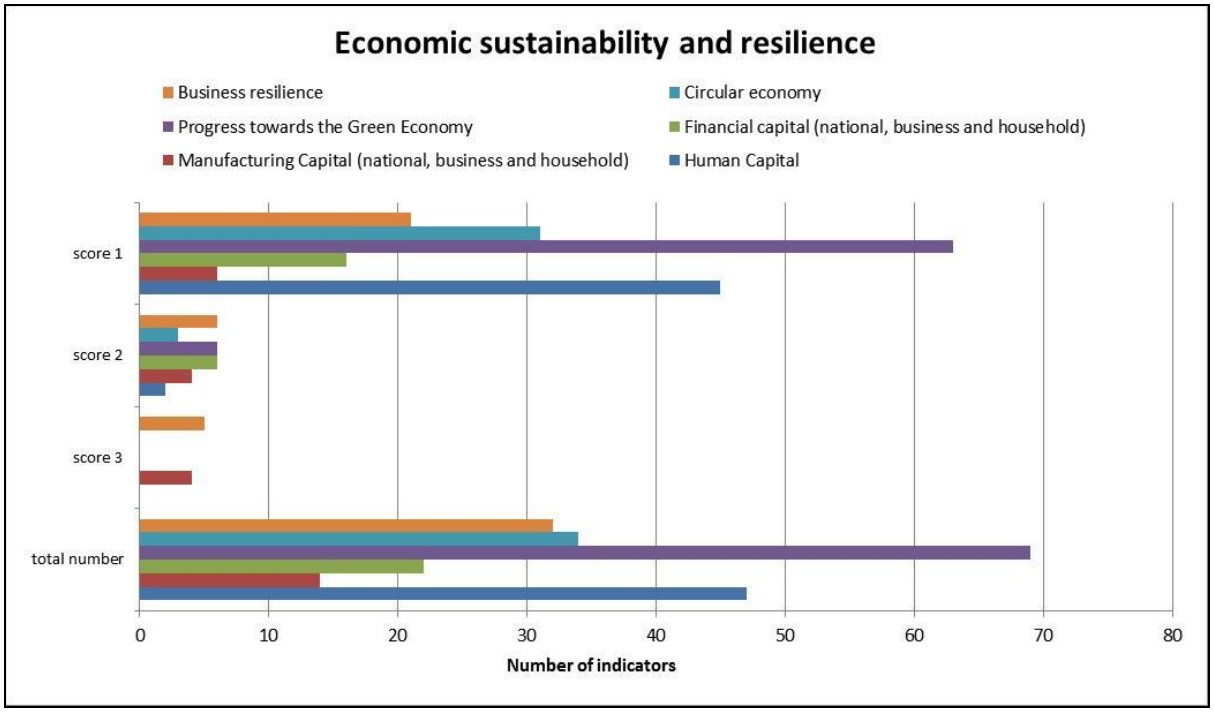
Analysing the information in figure 2-5 there is a higher number of indicators for the global stewardship topic than for the policy and decision making topic. The main reason is that the sub-topics addressed in policy and decision making (policy integration and coherence, participation of stakeholders and effectiveness, transparency and accountability) although issues very frequently mentioned in policy documents are not sufficiently developed in terms of indicators. Therefore this gap is mainly associated with the current state of indicators development in this topic.

Figure 2-6 Number of indicators and scores for the Quality of Life theme



Analysing the information in figure 2-6, there is a higher number of indicators for the financial topic than for the other ones. As expected, this topic is much more developed than the others in terms of indicators available and used at a broad scale. The topics health, education, social cohesion and subjective wellbeing are more or less evenly represented by indicators. The topics time use and local environment have fewer indicators, which is explained by the fact that these topics only have one sub-topic each, therefore in the global balance of indicators this is an expected outcome.

Figure 2-7 Number of indicators and scores for the Economic Sustainability and Resilience theme



Analysing the information in figure 2-7, there is a higher number of indicators for the "progress towards the green economy" topic than for the other ones. This is mainly explained by the higher number of sub-topics that compose this topic; in total this has six sub-topics, whereas the remaining topics have two, three or four sub-topics. This also explains the fact that the sub-topic with less indicators "manufacturing capital" only has two sub-topics.

One common trend in figures 2.2 to 2.7 is that there are much more indicators ranked with score 1 that those with scores 2 and 3. This is an expected result since there are many indicators that establish a weak connection to several topics and sub-topics of the mind map, and fewer indicators that establish a strong connection with several topics and sub-topics of the mind map.

The results obtained in this section of the gap analysis are coherent with the process taken to construct the NETGREEN database (as described in section 2.2). This rationale, which is thematically structured in the mind map, is reflected in these results, namely reflecting the orientation to have indicators that are broader in their coverage of green economy topics and sub-topics. This favored the presence in the database of indicators that address several topics of the green economy over very specific indicators that only address one. Nevertheless, the database not only has broad topic indicators but also more

specific topic indicators, in total there are 241 indicators having a score of three and 531 indicators with a score of two.

2.4 Gaps between policy reports and the database content

The objective of this section is to evaluate the database content by comparing keywords and indicators identified from the main current policy topics present in websites and documents from the main international organizations, national policies, which are identified in section 2.3, as well as those from previous interviews performed in tasks 2.1 and 3.2.

2.4.1 Keywords

The search performed in the policy documents and websites mentioned has yielded a set of relevant keywords that are not present in the Measuring Progress tool. These keywords have been structured by keywords families, meaning that for each keyword displayed in table 2.3, there are several related keywords not listed in the table.

Table 3.3 List of missing, relevant keywords organized by GE theme

Environmental Sustainability Keywords		
energy sources	marine and coastal resources	natural resources
pollution control	resources scarcity	sustainable fisheries
sustainable food systems	sustainable resource management	waste management
water management		

Social Justice Keywords		
access to basic resources	democratic Society	energy security
intergenerational justice	intragenerational justice	Social Development

Effective Governance Keywords		
stewardship and cooperation	public goods	common policy
social policy and	Policy and decision	

responsibility	making	

Quality of Life Keywords		
creativity	cultural services	education
Environmental Health	Health	living standards
local communities	working conditions	

Economic Sustainability and Resilience Keywords		
carbon market	circular economy	commodity prices
consumption patterns	Country debt	economic sustainability
Energy policy	Fiscal reform	Foreign investment
green economy	low carbon economy	market-based instruments
Markets	production patterns	public finance
resource use intensity and productivity	Subsidies	sustainable energy
Technological innovation	environmental externalities	transaction costs

The theme that requires the most additional work is the "economic sustainability and resilience" theme, which is not surprising considering the structure of the database which is centred in the mind map. The number of topics and sub-topics for this theme is very extensive, so it is likely that is also the theme with the most gaps in its keywords. However, this does not mean that the issues associated with these keywords are not covered at all by Measuring Progress; it means that there are only a few keywords associated with the issues. Hence, more keywords which would lead to the issue, should be integrated at this point. The keywords are listed here to demonstrate that there is an opportunity to improve the contents of the database by adding them. Since these keywords appear in important policy documents, it is likely that the users will eventually look for these keywords when searching the database.

Since the policy world is changing very fast and many stakeholders are very likely to change 'buzzwords' regularly, it is not the goal to include all possible keywords and policy topics, but to incorporate the most important ones. The most important topics that are missing are e.g. "Access to resources and services", "Circular Economy" and general "Progress towards a Green Economy". The respective sub-topics would be e.g. "Access to and quality of basic services (health, education, justice)", "Industrial Symbiosis" and "Green fiscal policy".

2.4.2 Indicators

The search performed in the policy documents and websites also focused on indicators or aspects to measure. Table 2.4 displays the results of this analysis representing aspects to measure that were mentioned in these sources but are not present in the NETGREEN database. The structure of this table follows the one of the mind map representing the topics and sub-topics in the two columns on the left and on the right column is present the result of the analysis mentioning aspects that are relevant to measure in each of the topics for which the database needs improvement.

Table 4.4 List of missing aspects to measure organized by GE theme

Environmental Sustainability		
Topic	**Sub-topic**	**Aspect to measure**
Environmental conditions	Availability and quality of biotic resources	Terrestrial resources (agricultural biodiversity - e.g. crop varieties, livestock species)
		Marine resources (algae, invertebrates)
		Genetic pool (Genetic Diversity, erosion and vulnerability)
	Availability and quality of abiotic resources	Biogeochemical stocks
	Ecosystems services, goods and functions	Production of services and resources, regulation services, support and habitat functions, cultural and amenity values
Environmental change	Changes in ecosystems	Loss of biodiversity, loss of habitats, loss of wetlands, soil degradation, acidification
	Climate change	Temperature change, sea level rise
	Depletion of resources	Rates of consumption non-renewable resources, rates of consumption of renewable resources

Social Justice		
Topic	**Sub-topic**	**Aspect to measure**
Access to resources and services	Access to and quality of resources (air, water, food, energy)	Access to: water, water sanitation, affordable energy, food security
	Access to and quality of basic services (health, education, justice)	access to medicines, access to IT's
Democracy and institutions	Constitutional and human rights and freedoms	Citizenship rights and duties
	Opportunities to develop individual capabilities	Political and public affair participation
	Stakeholder participation, engagement and empowerment	Social economy, third sector, civil society
		women empowerment
	Fairness, transparency and accountability of institutions	Institutional reform and policy reorientation
		Environmental crimes

Effective Governance		
Topic	**Sub-topic**	**Aspect to measure**
Global stewardship	Management of public goods and property rights	universality, exclusion, rivalry, transferability, enforcement, property rights, public goods, open access resources, diminishing returns
	Cost and benefit sharing on resources use	marginal costs and benefits, externalities, social and private costs, social and private optimum, market equilibrium, resources demand, internalization of externalities
	Technological developments and capacity building	capacity development, obstacles for development, development goals, sustainability goals, development of skills competencies and abilities of people
	Support ecological transition in developing countries	International environmental cooperation, quality of the environment in developing countries, communities, institutions, capabilities
Policy and decision making	Policy integration and coherence	Integration and coherence of different policies at the regional, national and international levels
	Participation of stakeholders	Participation of stakeholders in decision and policy making processes
	Effectiveness, transparency and accountability	environmental policy stringency

Quality of Life		
Topic	**Sub-topic**	**Aspect to measure**
Health	Overall health of population	Healthy lifestyles, Harmful habits (e.g. consumption of alcohol, tobacco), food intake, birth rate, children's health, maternal health
Education	Quality and availability of education	Investment on education, Literacy rate
Occupation	Quality of working conditions	Quality of working conditions
		Health and safety conditions
Social cohesion	Trust, security and safety	Crime and security (e.g. corruption, trafficking, cybercrime)
Time use	Work life balance	Commuting time, leisure time, unpaid labour
Local environment	Amenities and quality of public space	Access to green space/parks, noise pollution, exposure to natural and industrial risks
Financial	wealth	Financial assets
	Costs of living (housing, food, utilities, etc.)	Inflation, income and consumption taxes, utilities costs, housing costs

Economic Sustainability and Resilience		
Topic	**Sub-topic**	**Aspect to measure**
Human capital	Knowledge and skills (investment and outcomes)	Intellectual property
Manufacturing Capital	Investment in manufacturing capital	infrastructure, buildings, machinery, tools, devices, durable goods, nondurable goods
Financial capital	Access to financial markets	access to national and international financial markets for individuals, families, business, governments
Progress towards the GE	Green investment	sustainable public procurement
	Green fiscal policy (e.g. legislation, taxes, subsidies)	externalities, economic valuation of ecosystem services
	Sustainable consumption	green public procurement
	Sustainable production	corporate sustainability reporting, carbon leakage
Circular economy	Industrial symbiosis	sharing of services, utility, and by-product resources among industries
Business resilience	Businesses profile	diversification, market share, internationalization
	Competitiveness	prices of commodities

The indicators and aspects to measure mentioned in this table are those that are not present in the NETGREEN database; however this does not mean that the issues mentioned here are not addressed at all by the database. In fact, these issues are in many cases represented by indicators related to a similar topic or sub-topic. The objective of listing these indicators and aspects to measure here is to demonstrate that there is an opportunity to improve the contents of the database by adding these aspects which appear in the policy documents searched, and therefore it is likely that the users will eventually look for these when searching the database.

2.5 Analysis of geographical coverage

To illustrate the current overall geographical coverage of the database, we counted the individual number of applicable indicators for a sample of countries from different continents.

South America		Africa	
Country	**Number of Indicators**	**Country**	**Number of Indicators**
Uruguay	40	Kenya	40
Argentina	48	Egypt	38
Chile	60	Tanzania	43
Brazil	51	Mali	44
Paraguay	39	Senegal	44

North & Central America		Asia	
Country	**Number of Indicators**	**Country**	**Number of Indicators**
Canada	64	Malaysia	40
United States	76	North Korea	28
Mexico	64	Philippines	42
Guatemala	38	Japan	76
Honduras	41	India	55

Europe	
Country	**Number of Indicators**
Austria	211
Sweden	202
Spain	195
Poland	207
Italy	204

Despite a strong focus on European countries, Measuring Progress has worldwide coverage. Only countries which are difficult to access, such as North Korea (28 indicators), indicate a small number of indicators that provide data for these countries.

For non-European countries, the number of available indicators lays approximately between 38 and 60 indicators per country. In Europe, there are about 200 indicators provide data per country. Technically it would be easily feasible to add more data for specific countries, respective any new regional focus of this database.

Hence, in order to strengthen the focus on the Global South, the respective data could be added to the databank. Also a sub regional focus could be added to the databank, by adding indicators which are dedicated to the respective region. Thus, the tool can be extended respectively new study or policy questions. The mechanisms of the NETGREEN project to add data can be used then to add the data and indicators effectively.

3 :: User feedback

The user group tested the Measuring Progress tool, using it to find indicators. Feedback was collected in person during NETGREEN workshops, by e-mail from a user group of about 80 experts in green economy indicators and policy, and also through an online feedback form on the homepage of www.measuring-progress.eu .

Many users found this tool very useful to find the right indicators and to access information on these indicators. One of the most appreciated features was the direct access to data. This is no surprise as finding indicators on the respective indicator websites of the big data providers can be rather challenging and time-consuming.

Some of the users also highly valued the information about similar or related indicators and information about potential misinterpretations of the indicator. They also appreciated the impartiality of the tool and the willingness of the team to support users in finding the right answers rather than providing readymade answers.

The flexibility of the tool to cater for audiences with different levels of understanding and different political foci was also perceived as helpful. Which information was perceived as valuable and useful was greatly dependent on the background and expertise level of the user. Some users liked the print function and the analysis of their indicator selection, which includes a visual evaluation of which pillars of the green economy (environmental, social etc.) are covered.

One of the key challenges of the project team was making the search function and the results obtained by the search useful to all users of the tools. Due to the interconnectedness of green economy issues, many key words and policy issues used as search terms provide a long list of indicator suggestions. The order in which those suggestions appeared was frequently criticized by users and the NETGREEN team tested many suggestions for an improved search algorithm. In the end, the search algorithms provided for most users the most important indicators at the start of the list. With every major addition to the information base of the website in the future the search algorithm will need further testing and improvement. Amongst the search entries, there was the most room for improvement for the keyword search.

In addition to these recurring comments, many important suggestions have been made by members of the advisory board and the user group regarding filters, wordings, or distinction of indicators which were integrated into the website in the first six month of development.

4 :: Research Recommendations

Many users involved in the development and in the testing phase of the database www.measuring-progress.eu, found the structure of the tool and the information on the tool very useful, especially for users with a limited overview on green economy and sustainable development indicators.

Nonetheless, the gap analysis (section 2) and the feedback from users (section 3) showed quite convincingly that the power of the database and the added value for the user could be further improved if the database contained more information useful for more specialist users.

The objective of the NETGREEN team was to provide a broad overview on indicators measuring sustainable development or the progress towards a green economy. As this field is ever expanding, any workable indicator selection was bound to produce areas where the indicator choice on the website was limited.

The gaps identified in this report represent an opportunity to improve www.measuring-progress.eu . Several developments that can be implemented to enhance the database and address the gaps identified in sections 2.3 and 2.4:

1- Currently there are two major policy developments related to the green economy that will require a substantial monitoring and measurement process. The first one is the **Circular Economy Package** of the European Union and the second one is the **UN Sustainable Development Goals (SDGs)**. Both initiatives will be followed by an intensive discussion on the right measurements and some work to develop indicators currently missing. Integrating key words related to these policy initiatives to www.measuring-progress.eu and adding indicators useful for these fields would help the tool stay relevant for the near future.

2- Due to the flexibility of the website it would also be possible to provide specific search forms using the categorisation and terminology of the Circular Economy Package or the UN SDGs. That could improve the attractiveness of www.measuring-progress.eu for the users in these fields.

3- Adding more data sources to improve the geographical coverage of the indicator sets would increase the potential audience of the website significantly. Finding similar indicator sets for indicators provided by EUROSTAT on other continents will allow a better international comparison and give www.measuring-progress.eu a global audience.

4- It is worth noting that adding indicators and keywords to the database is very simple, as the NETGREEN team developed an entry mask which ensures a consistent entry. Experts interested in adding to the database can do so.

5- The website could be expanded to more specific policy fields and show the importance of green economy measurements in those specific fields. For instance, adding indicators and key words useful for water policy or marine policy could help the website expand and at the same time show policy makers specialized in marine issues the value of a wider perspective on economic, social and environmental change. The inclusion of some further development of www.measuring.progress.eu into H2020 projects in political fields related to the green economy would therefore be an option worth considering.

www.measuring-progress.eu is a developed and flexible framework for the identification and choice of indicators and can be adapted to be relevant for the discussion of many current and future policy questions. Entering indicators and keywords is easy using the entry mask developed in the project and linking the website to other information pools (eg. LIAISE, Measure What Matters and many more) relevant to sustainable development could help to keep these results of DG Research funding alive and useful.

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