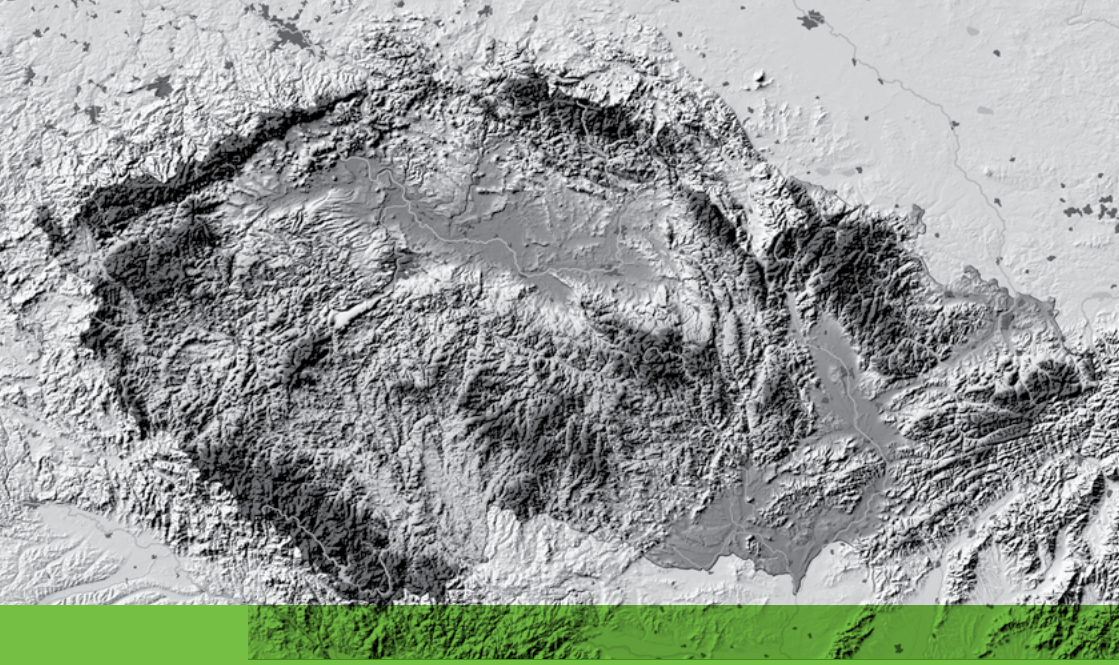


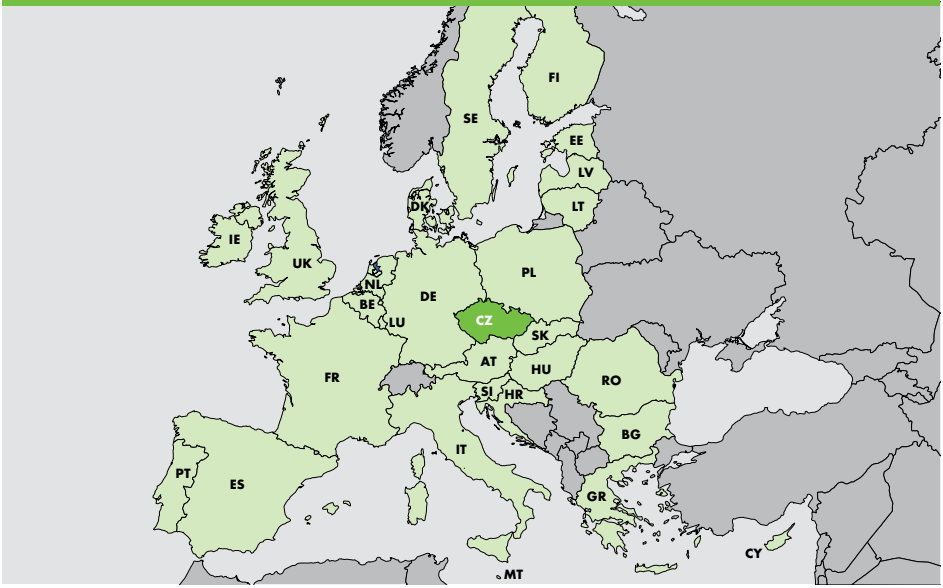
INTRODUCTION

The Czech Republic in numbers 2012

Indicator (Unit of measurement)	2012
Area (km^2)	78 866
Population ('000 persons)	10 516
Mean altitude (metres above sea level)	450
Long-term average temperature °C	8.3
Municipalities (number)	6 253
Largest municipality – Prague (Capital City, thous. persons)	1 247
Population density (persons per km^2)	133
Average age (years)	41.3
Gross domestic product per capita (EUR PPP)	20 200
Annual average foreign exchange rate (CZK/EUR) (Dec. 2013)	27.5
Inflation rate (%)	3.3
Average number of employees ('000 persons)	3 760
Registered unemployment rate (%)	9.36

Source: Czech Statistical Office, Energy Regulatory Office, Czech Hydrometeorological Institute

Figure 1: European Union: December 1st, 2013



The Czech Republic and green growth

The Czech Republic's economy has been performing remarkably well for almost a quarter of century since the Velvet Revolution in 1989, when the totalitarian regime and planned economy were overthrown. There has been periods of faster and slower development, complicated more recently by the world economic slowdown (recession), but the overall performance of the socio-economic system has moved closer to the West European model.

Over the years, national policies have recognized that economic growth has also had harmful side effects. The fossil fuel-based economy, a driver of growth in the past, may also hold back growth in the future. Recognizing these threats and new challenges, the Czech Republic adopted a Strategy for Sustainable Development back in 2004. The Strategy defined the principal (strategic) goals, as well as thematic and interim goals and instruments that were formulated in a way to harmonize the economic, environmental and social needs of society.

The recently updated Strategy (called the Strategic Framework for Sustainable Development in the Czech Republic) is designed to achieve the best attainable quality of life for the present generation and create conditions for a high quality of life for future generations. It defines five priorities: society, people and health; the economy and innovation; regional development; landscape, ecosystems and biodiversity; and stable and secure society.

The Strategy does not explicitly refer to the green growth concept, although these are closely interrelated. A sustainable economy is based on an increase in income, employment, public health and a secure society driven by investments and innovations reducing carbon emissions and pollution, thereby enhancing resource efficiency, and preserving biodiversity and ecosystem services. Green growth is thus not conceived as a replacement for sustainable development but rather as a subset of it. In practical terms, green growth is an engine and a means for a green economy – one of the fundamental pillars of sustainable development.

Thus, this concept is fully in compliance with the recommendations of many international organizations. They have worked with different assumptions and models, have included different specific factors in their thinking and have come to various definitions over the last couple of years, but those currently being used internationally have a lot in common. The green growth strategy aims to foster economic growth and development while ensuring that natural assets are used sustainably and continue to provide the resources and environmental services on which the growth and well-being rely (OECD). Green growth is efficient in its use of natural resources, clean in that it minimises pollution and environmental impacts, and resilient in that it takes account of natural hazards (World Bank). The green economy aims to improve human well-being and social equity while significantly reducing environmental risks and ecological scarcities (UNEP). The green economy cannot be resource efficient only because resource efficiency does not guarantee steady or declining resource use; to achieve sustainability we also need to focus on ecosystem resilience – the status, trends and limits of natural systems (EEA).

Since green growth has not been part of any official governmental strategy in the Czech Republic and remains more the domain of academic and non-governmental initiatives, this report uses the above concepts to frame green growth indicators in a consistent and analytically sound way.

Monitoring green growth

Although green growth has been widely recognized as a plausible means of achieving a sustainable future, there is no one common prescription for implementing strategies for green growth, or for monitoring them. Green growth clearly remains a rather abstract concept and hence provides little guidance to decision-makers. But policymaking requires a clear understanding of where we are and how we are progressing. It requires the concept to be translated into measurable indicators – and targets when possible – supported with appropriate communication to potential users.

Measuring progress in regard to complex and multi-dimensional change is a challenging task. No agreement exists yet on an analytical framework or a set of relevant indicators. To trace the development of the Czech economy in relation to green growth in the first report in 2011[1], we adapted the OECD indicator framework[2]. In order to capture not only the economic and environmental links, but also the social dimension, the first report structured the selected indicators into five interrelated groups: sustainability and equity; environmental and resource productivity; natural asset base; environmental quality of life; policy responses and economic opportunities. In total, 27 indicators captured the most important phenomena without any ambition to undertake either a comprehensive assessment of green growth or to narrow the indicator selection to a handful of headline indicators.

This second edition of the green growth assessment took a great deal of inspiration from various studies on sustainable development in the Czech Republic and from the latest international expert knowledge about the issue. A conceptual framework for selecting and organizing the indicators was adopted from the Green Growth Knowledge Platform[3] – a global network of researchers and development experts who address major knowledge gaps in green growth theory and practice (organizations such as the OECD, UNEP, the World Bank and others are behind this initiative).

The adopted approach stems from wealth accounting which enables policymakers to look at whether growth is achieved at the expense of asset depletion. The selected indicators are designed to capture the economy-environment linkage and demonstrate whether and to what extent economic performance is being "greened." The key principles of the way the framework works are the following (Figure 2 shows how these framework elements and indicators interrelate):

- The environment can be thought of as natural capital, and like other forms of capital, it delivers essential inputs into production and consumption (the production function provides a basis for the framework). Yet many of these inputs and the amenity services that support wellbeing are often not traded and hence are not sufficiently well captured by standard economic and environmental indicators.
- Inputs: the natural asset base. Natural capital provides both services (including sink services for pollution) and natural resources that constitute crucial inputs into production or directly affect wellbeing. Reducing the natural asset base need not necessarily contradict green growth given

[1] CSO 2011. *Green growth in the Czech Republic.* (Havranek, M. and Sidorov, E. – eds.), Czech Statistical Office, Prague.

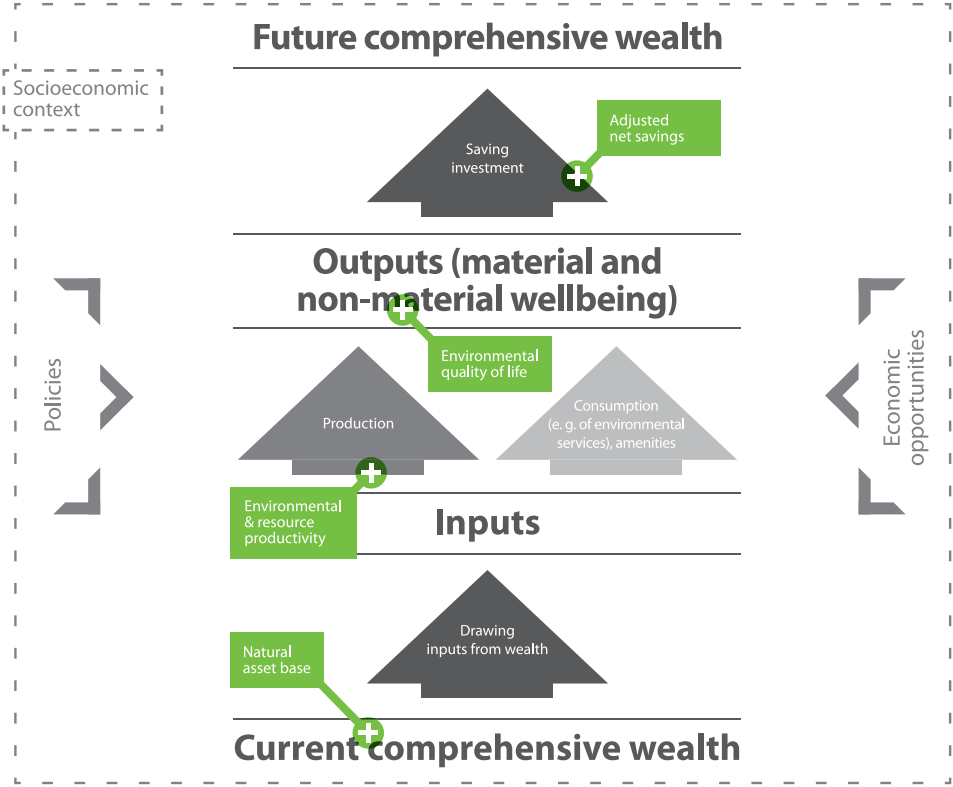
[2] OECD 2009. *Green growth strategy.*

[3] GGKP 2013. *Moving towards a Common Approach on Green Growth Indicators.* A Green Growth Knowledge Platform Scoping Paper. April 2013

that the importance of assets may change owing to recycling, higher productivity, or substitution. Indicators to monitor risks related to possible overuse and depletion are crucial for green growth assessment.

- Production: intensity/productivity. This category comprises measures focusing on environment-related "productivity," or its inverse, "intensity." The indicators can measure progress in producing and consuming more while using fewer environmental services and natural assets.
- Outputs: material and non-material wellbeing. Output refers to aspects that are not reported by conventional macroeconomic measures (the environment-related aspects of the quality of life); many of the quality of life aspects are measured (impact on labour productivity through effects on population health).
- The production function approach needs to be seen in the context of government policies, economic opportunities and the socio-economic background. Growth should be assessed in the context of important social goals, such as poverty reduction, social equity and inclusion, effectively linking the three pillars of sustainable development.

Figure 2: The production framework for green growth indicators and wealth accounting



Source: GGKP 2013

The Platform has identified and proposed almost fifty indicators to monitor green growth. This second report has selected 27 of these based on relevance to Czech conditions and data availability. Most indicators are derived from the data and information systems of the Czech Statistical Office, while the rest of the indicators come from a variety of other available sources. The following table sums up the main results.

	Indicator Name	Evaluation of trend		International comparison
		The whole monitored period	The last year-to-year change	
I.	**SOCIO–ECONOMIC CONTEXT**			
1.1	Genuine savings (Adjusted net savings)	+/–	+	+/–
1.2	Employment rate of older workers			
	– Men	+/–	+	+/–
	– Women	+		–
1.3	At-risk-of-poverty rate by gender			
	– Men	–	+	+
	– Women	–		+
1.4	Age index and dependency index			
	– Old age index	–	–	–
	– Economic dependency index	–	–	+/–
1.5	Life expectancy at birth			
	– Life expectancy (men and women)	+	+/–	–
	– Healthy life expectancy (men and women)	+/–	+/–	+
1.6	Gini index	–	–	–
1.7	Labour productivity	–	–	–
II.	**ENVIRONMENTAL AND RESOURCE PRODUCTIVITY/INTENSITY**			
2.1	Greenhouse gas productivity	+	+	–
2.2	Energy productivity	+/–	+/–	–
2.3	Renewable energy resources	+	+	–
2.4	Material productivity	+	+	–
2.5	Material and carbon footprint	+/–	+/–	+/–
2.6	Water use productivity	+	+	+
2.7	Efficiency of use of mineral fertilizers			
	– Nitrogen	–	+/–	–
	– Phosphorus	+/–	+/–	+/–
2.8	Waste treatment	+	+	+/–

III.	**NATURAL ASSET BASE**			
3.1	Coal extraction and reserves	–	–	n.a.
3.2	Forest growing stock	+	+	+/–
3.3	Water abstraction	+	+/–	+
3.4	Land use change	+/–	n.a.	+/–
3.5	Biodiversity threats	–	–	n.a.
3.6	Ecological debt	–	+	–
IV.	**THE ENVIRONMENTAL QUALITY OF LIFE**			
4.1	Health risks from air pollution			
	– Population exposed to PM_{10}	–	–	n.a.
	– Population exposed to PAU	+	+	n.a.
4.2	Health risk from air pollution – – Patients treated	–	–	+/–
4.3	Population connected to sewage treatment and public water supply			
	– Sewerage water connection	+	–	–
	– Public water supply	+	+	+
V.	**POLICIES AND ECONOMIC OPPORTUNITIES**			
5.1	Educational attainment: population over 15 years			
	– Upper secondary	+	+/–	+
	– Tertiary	+	+	–
5.2	Green jobs	+	+/–	–
5.3	Environmental protection expenditure	+	+/–	n.a.
5.4	Share of environmental taxes	–	–	n.a.
5.5	Expenditures on R&D	+	+	+/–
5.6	Energy prices: Electricity and heat	+/–	+	–

Explanations:

+ positive trend; values at the level of leading states;

+/– fluctuating values or stable values; values at the average level of comparable states;

– negative trend; values close to the lagging states.

The current assessment of green growth in the Czech Republic is not final. It can be seen as a contribution to international cooperation in the field of green growth indicators and also as an input into a debate on how to use the signals provided by the indicators for implementation of necessary actions. In order not to be pointed in the wrong direction, further research is needed to better understand the impacts of environmental developments on economic activity and vice versa. Besides research, an effective green growth strategy requires participation. Therefore, in addition to experts the public should also get involved in certain phases of the whole process, in particular in setting goals and targets, and assigning weights to particular indicators in designing policy measures.