

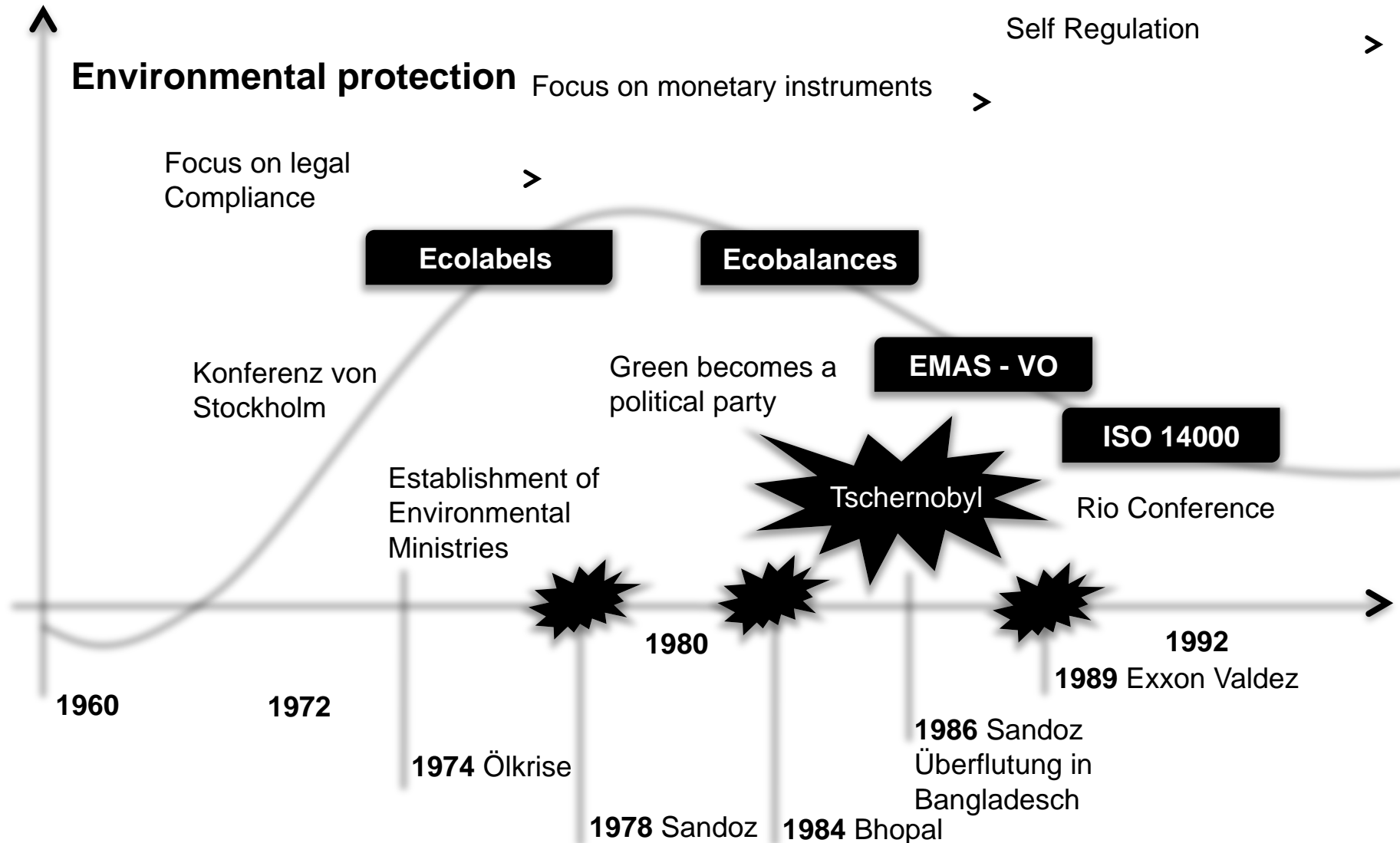
Univ. Doz. Mag. Dr. Christine Jasch

**Institute for environmental economics and
management**

ww.ioew.at

**Environmental economics, external effects,
standardisation and ISO 14000 Series**

The rise of environmental protection HALTIGwirtschaften



External environmental costs

- Costs of environmental damage and degradation, which don't show up in the profit and loss accounts of the originator(s) and have to be borne by the public or others, e.g. health costs due to polluted air and water, reduced living quality of environments

Who pays for external costs?

- Climate change: e.g. floods, tornados, loss of harvests, paid by insurances, single persones, taxes, future generations
- Costs of emissions: e.g. sick leave (respiratory system, allergies), costs of treatment, soil acidification, paid by social security, taxes, single persons
- Noise: e.g. Cardiovascular diseases, loss of value of buildings, paid by social security, taxes, single persons
- Car accidents: damage to persons and property, paid by social security, insurance, taxes, single persons.

estimating external effects

- Improvement of longterm water supply for agriculture and industry, calculated by the difference between agricultural income with sufficient and insufficient water supply, benefit 16 Mio. €
- Securing amount and quality of drinking water supply, estimated by the difference in costs between reduced drinking water and sufficient drinking water, benefit 2 Mio. €.
- Improvement of the quality of water and the waste water treatment, calculated by the costs to install waste water treatment plants, costs 8 Mio. €
- Improvement of protection against flooding and reduction of Vernässungsgefahr, calculated with saved damage costs, benefits 50.000 €
- Improvement of environmental and landscape aspects and implementation of recreation areas, estimated by a fictitious entrance fee, benefit 2 Mio. €
- Increase in value by changing agricultural land into land open for construction, benefit 150 Mio. €

Marchfeldkanal estimating external effects



- Industry and
 - Agriculture 16
 - Drinking water 2
 - Water quality 8
 - Flooding 0,05
 - Recreation value 2
 - Value of soil 150
- Benefit in Mio.€: 178,05

Paths for environmental protection NACHHALTIGwirtschaften

Command and Control Approach

Instruments:

- Prohibitions and constraints

Benefits

- equal standards for all
- clear (minimum) requirement, license to operate

Disadvantages

- compliance control, administrative burden, not cost efficient. , hampering technological development

Market based Approach

Instruments:

- Ecotaxes, fees, bubble and cap, emissions certificates

Benefits

- cost efficient, incentive to overperform
- Government only sets general rules, development of standards by industry, external audits

Disadvantages

- price development for emission certificates, only the pioneers participate in EMS and Labels, not binding

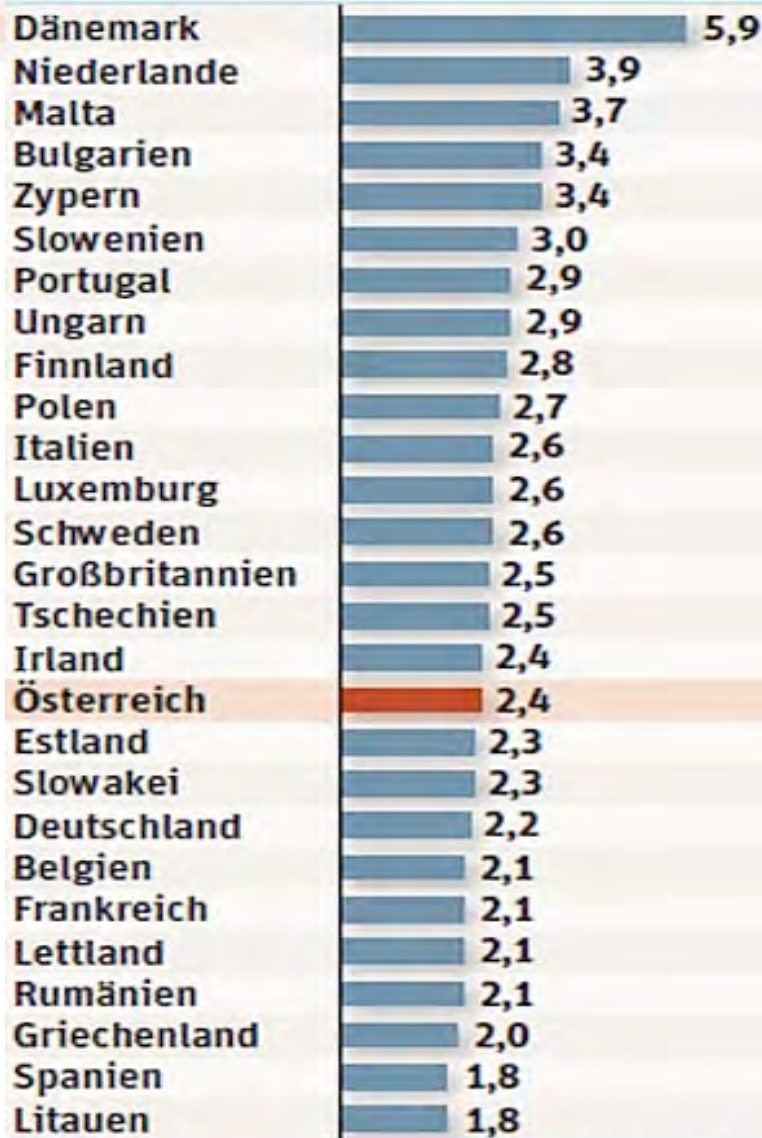
Partnership Approach

Instruments:

- Voluntary agreements with industry sectors and with political administration, management systems, ecolabels, awards



Anteil umweltbezogener Steuern in % des BIP



Quelle: Eurostat

DER STANDARD

NACHHALTIGwirtschaften

- Austria in the middle field,
- taxes and fees on petrol, cars, highways, waste, about 10 % in total with environmental impact, but low behaviour change effect.

- The **gross domestic product (GDP)** or **gross domestic income (GDI)** is a measure of a country's overall economic output. It is the market value of all final goods and services made within the borders of a country in a year. It is often positively correlated with the standard of living, though its use as a stand-in for measuring the standard of living has come under increasing criticism and many countries are actively exploring alternative measures to GDP for that purpose.
- All expenses, e.g. for clean up after natural disasters, positively contribute to GDP. On the other hand, all non paid services, like household work, are not included. For other method to estimate the national standards of living see e.g. the **Gross National Happiness Index**.

- GDP can be determined in three ways, all of which should in principle give the same result. They are the product (or output) approach, the income approach, and the expenditure approach.
- The most direct of the three is the product approach, which sums the outputs of every class of enterprise to arrive at the total. The expenditure approach works on the principle that all of the product must be bought by somebody, therefore the value of the total product must be equal to people's total expenditures in buying things. The income approach works on the principle that the incomes of the productive factors ("producers," colloquially) must be equal to the value of their product, and determines GDP by finding the sum of all producers' incomes.
- The product approach with its measurement of produced products by industry sector directly relates to environmental national accounting.

National Environmental Accounting

- Satellite system to GDP
- Assessment of industry sector specific material and energy flows in volumes (instead of prices)
- Supplemented by status report on Condition of Environment

Global Ecological Footprint

NACHHALTIGwirtschaften

- Earth Overshoot Day marks an unfortunate milestone: the day when humanity begins living beyond its ecological means. Beyond that day, we move into the ecological equivalent of deficit spending, utilizing resources at a rate faster than what the planet can regenerate in a calendar year.
- Globally, we now require the equivalent of 1.4 planets to support our lifestyles. Put another way, in less than 10 months, humanity will have used ecological services it takes 12 months for the Earth to regenerate.
- . 9.10.2006, 23.9.2008, 25.9.2009
- www.footprintnetwork.org
- www.carbonfootprint.com

Physical Flow Accounts SEEA

•INPUTS

- Products and Services by NACE Codes
- Natural Resources
- Ecosystem Inputs

•OUTPUTS

- Products and Services by NACE Codes
- Residuals

Benefits of standards

NACHHALIGwirtschaften



What are Standards?

- Laws are developed by voted public parties including other stakeholders.
- Standards are voluntary agreements by industry to facilitate trade and contractual agreements.
- They are binding between the contractual partners, or as industry sector compliance requirement.
- They can become mandatory by national or European law, e.g. ON standard on the categorization of hazardous waste or ISO 14001 as Annex 1 to the EMAS Regulation.
- The „New Deal“ of the European commission stipulates, that the EU only develops the legal framework and CEN develops the more detailed requirements. This was first implemented with EMAS and ISO 14001.
- Increasing inclusion of stakeholders into the development process of international standards, as the importance of international organisations for worldwide institutional development increases. (Globalization)

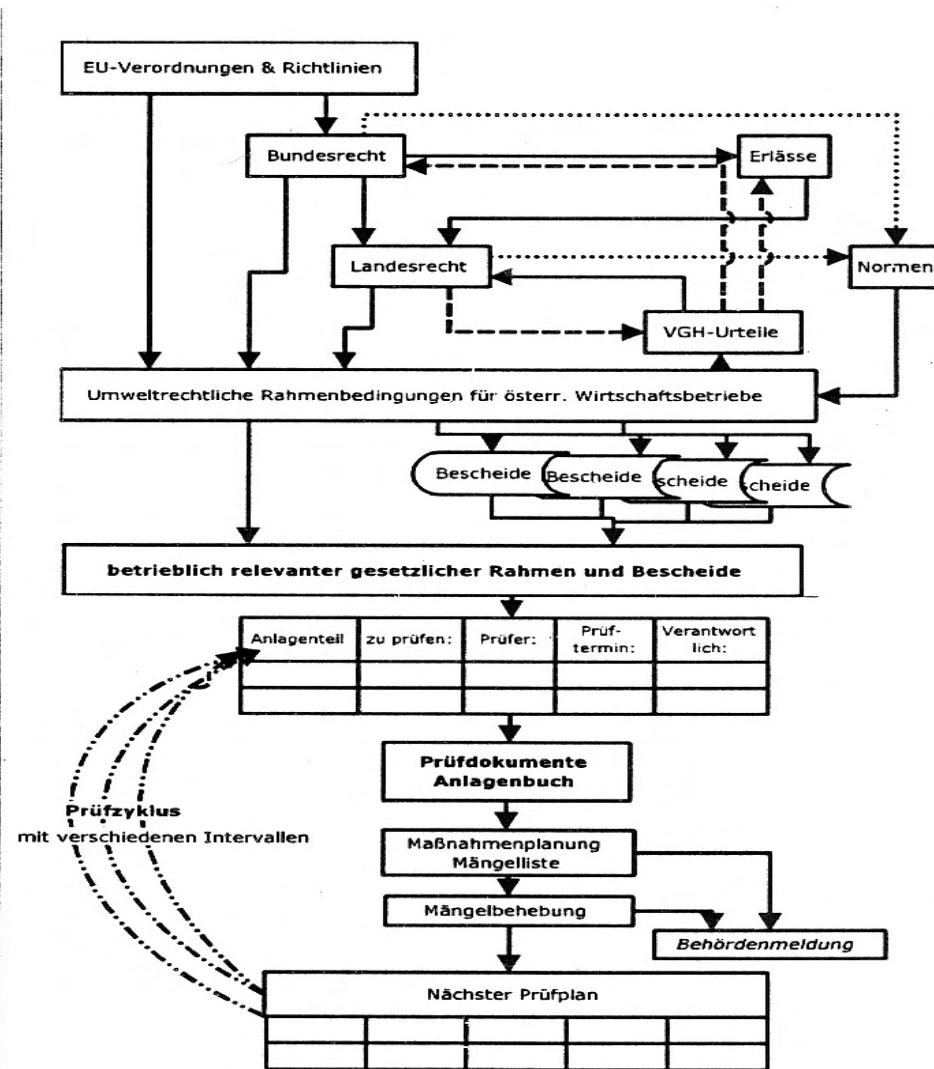
The changing role of ISO

NACHHALTIGwirtschaften

- Role of international Organisations in a globalised World
- Positioning of ISO als world standard setting body
- Inclusion of stakeholder interests required
- Necessary for acceptance and trust in certificates
- First needed for environmental management
- For ISO 26000 actively organised



- Law, e.g. Waste Law, Chemical Law
- Legal Ordinance, e.g. classification of hazardous waste according to ON 21000
- Legal Notification, e.g. notification of production permission





Die Sinnlosigkeit eines „Gütesiegels“

ISO-SEUCHE

Der ISO-Rummel scheint immer ärger zu werden. Kritische Stimmen werden zurückgedrängt, wer nicht iso-zertifiziert ist, gehört schon fast zu den Aussätzigen der Wirtschaft. Es ist ein Markt, auf dem bereits viele Millionen umgesetzt werden (siehe auch a3-ECO 8-9, 10, 11/1994). Und es gibt fast keine Branche mehr, die nicht unter ISO-Kuratel genommen wird. Nun wollen sich bereits Möbelpacker für ihr freundliches Auftreten ein ISO-Zertifikat ausstellen lassen. Dabei geht es gar nicht um Qualität, sondern nur darum, ob Betriebsabläufe möglichst gleichbleibend sind. Ob ein Produkt gleichbleibend schlecht ist oder ob die Kundschaft auch einen Nutzen davon hat, ist völlig ISO-egal.

Manchen Firmen dürfte da Unternehmensberater Reinhard Sprenger in einem Beitrag im „Manager Magazin“ aus der Seele gesprochen haben:

„Da macht sich die Industrie zum Stempelkissen für ein skandalöses teures Beurkundungsritual, das sie inhaltlich keinen Schritt weiterbringt. Jeder macht mit, weil jeder auf den anderen zeigt. Alle wissen es und alle wissen, daß es alle wissen. Und alle kennen den Tribünen-effekt – die ersten, die aufstehen, haben kurzfristig einen Vorteil, sie sehen besser. Alle anderen ziehen hinterher, der Vorteil ist verspielt, sie stehen. Und alle stehen unbehaglich. Daß für diesen Unsinn auch noch uns umhin ausgegeben werden,

daß ganz nebenbei die Wertschöpfungsprozesse zusätzlich bürokratisch belastet werden – egal.“ Es sei alles, so Sprenger, ein Rückschritt in stumpfsinnige Bürokratie.

Damit das ISO-Geschäft aber auch wirklich floriert, muß nach der Erstprüfung jedes Jahr ein weiteres „Audit“ gemacht werden, um unter Beweis zu stellen, weiter ISO-würdig zu sein. Und schon droht die nächste Zertifizierungswelle. Ab sofort gibt es „Öko-Audits“ (für Umweltminister Martin Bartenstein künftig ein Muß, um erfolgreich zu sein), eine Art Umweltprüfung. Für die diversen Gutachter ein neues Bonanza, denn ein Öko-Audit dürfte für einen Großbetrieb nicht unter einer Million Schilling zu haben sein ...



Standardisation bodies

- ISO International Standardization Organisation
- Members are national standardization bodies
- Europa: CEN
- CEN standards overrules national european standards
- Austria: ON

Certification against standards

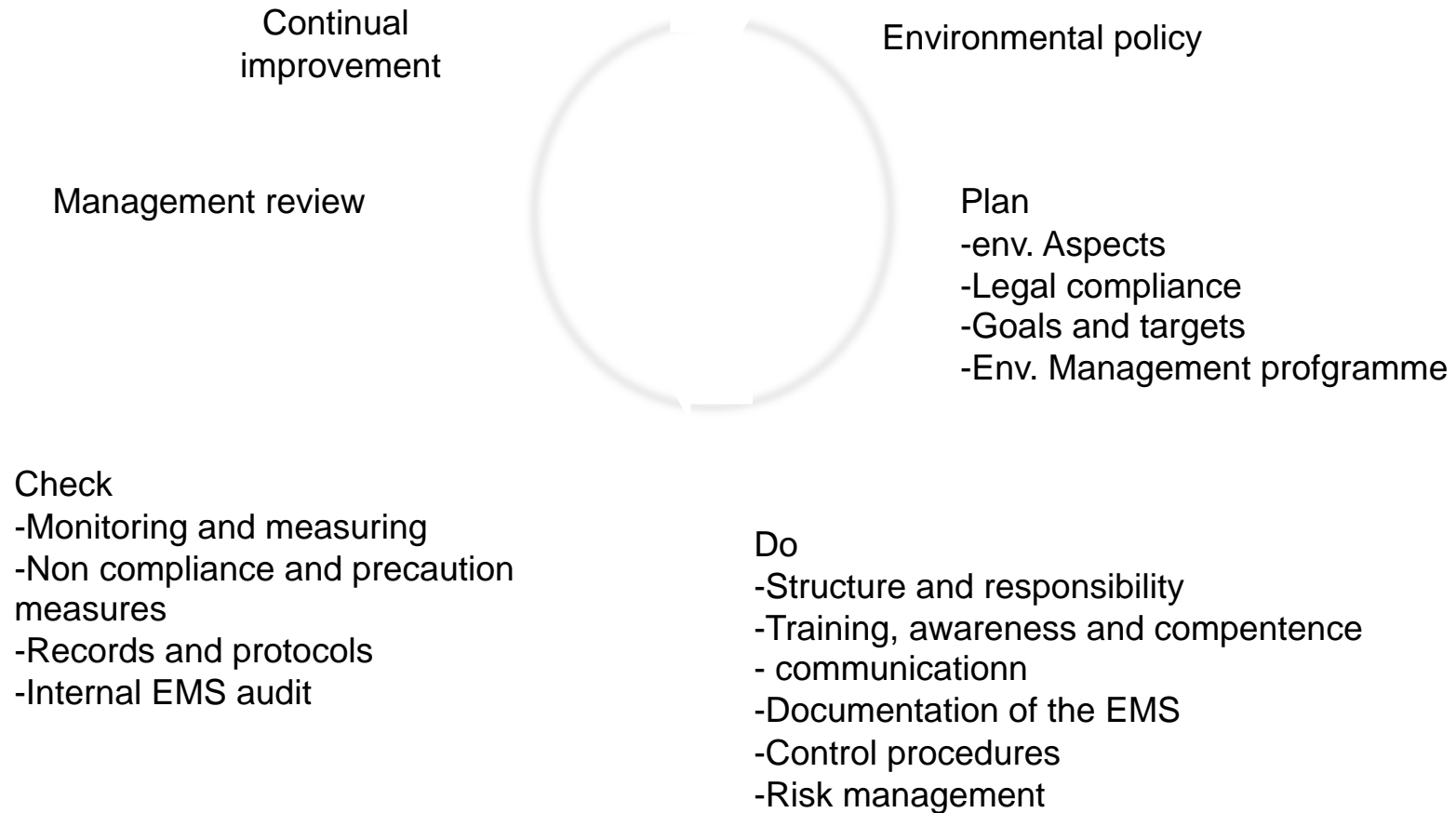
- Spezifikation standard ISO 14001
- Only a specification standard can be certified
- Guidance documents – most other standards in the ISO 14000 series, also ISO 26000

Corporate Environmental Management System:

- Take responsibility
- Set targets
- Implement responsibilities and procedures
- Control achievement

- Plan
- Do
- Check
- Act

Environmental management loop of ISO 14001



ISO 14000 Series (www.iso.org)

NACHHALTIGwirtschaften

- ISO 14001 Umweltmanagementsystemanforderungen
- ISO 14015 Environmental assessments of sites and organisations
- ISO 14020 Environmental Labelling
- ISO 14031 Environmental Performance Evaluation Guidelines
- ISO 14040, 14044, 14047, 14047, 14049 Life Cycle Assessment
- ISO 14051 Material Flow Cost Accounting
- ISO 14062 Integrating environmental aspects into product design
- Environmental aspects in product standards
- ISO 14063 Environmental Communication
- ISO 14064 Greenhouse Gas Verification Specification
- ISO 14065 Greenhouse Gas Requirements for verification bodies
- Measuring the carbon footprint of products
- Terms and Definitions
- ISO 19011 Guidelines for auditing management systems

Prüfungsfragen

- What are external costs?
- Classification of instruments for environmental protection
- What is a standard? Is it legally binding?
- Which topics are covered in the ISO 14000 series?
- What is a specification standard?
- How is the ISO 14001 structured?