

# Quality analysis and evaluation of Environmental Management training programmes

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# **The assessment of elaborated training programmes is based on**

## **Training programme principles**

*formulated by H. Wagener*

*(report in Paderborn 23.09.2008.)*

and

## **Criteria for training programme**

*(formulated in Riga Meeting 27.02.2009.)*

# Training programme principles includes:

- Thema
- Principal content issues
- Module objective
- Methods used
- Tools used

# Module 1- Principles of Environmental Management Systems



Content:

- Principal understanding on Environmental Management Systems
- The general content and structure of ISO 14001
- The starting process for implementation of EMS

## Module 2 - Analysis of Resources

### Content:

- The main legal requirements (on national level)
- Identification of environmental aspects
- Assessment of most important environmental aspects (using criteria)
- Practical assessment of environmental problems / aspects at enterprise

## Module 3

# Environmental policy and programmes

## Content:

- The content and role of Environmental policy
- The linkage between environmental aspects – policy – objectives and programmes
- Formulation of Environmental objectives

# Module 4 – EMS Manual



## Content:

- EMS Manual – structure and content : ISO 14001 requirements
- Objectives, responsibilities stated by EMS
- Elaboration of Environmental processes and procedures

# Module 5 - Continuous improvement



## Content:

- Internal audit – ISO 14001 requirements
- Preparation, realisation and documentation of Internal audit
- Management review- main sources:  
(unconformances, recorded monitoring data, results from audit)
- Certification audit



# Criteria for training programme



## Content issues:

- **Basic understanding of Environmental issues/problems;**
- **Balance between theory and applied aspects;**
- Identification of **target group** – their **requirements** and problems, motivation;
- **Adaptation** – according the target group;
- **Accordance with ISO 14001;**

# Criteria for training programme



## Quality criteria:

- **Clearness and credibility** of teaching material;

## Realization criteria:

- **Testing procedure** of knowledge and skills;
- **Appropriate and effective teaching methodology;**

# **Principal comments on (partly) elaborated training programmes**



For

**National Transport University Kiev**

and

**Rostov State University of Civil Engineering**

TEMPUS UMRU MEETING - KIEV  
09.06.-11.06.2009.

# Module 1- Principles of Environmental Management Systems



In principal the content and teaching methodology of Module 1 is corresponding the stated requirements and good designed.

I would like to recommend to put more attention to the following content items:

- principal understanding on environmental problems in global, regional and local scale;  
but not formulated and presented in academic form;
- the overall (general) content of ISO 14001 (main procedures);

# Module 1- Principles of Environmental Management Systems



I would like to recommend to put more attention to the following content items:

-the benefits of implementation of EMS – specific benefits for certain organization – corporate enterprise (producer or autotrafic enterprise)

and/or educational institution (university);

-principal preconditions for successful implementation of EMS at enterprise;

I totally agree, that characterization of EMS as a new, current, needed management system is necessary.

# What could be important: to show **4 parts** of Environmental management system –

## ***Management responsibility:***

Environmental policy. Environmental aspects. Environmental objectives.

## ***Resource Management :***

Environmental programmes. Training and education.

## ***Process Management :***

Process control. Legal requirements. Emergency preparedness and response.  
Monitoring and measurements. External and internal communication.

## ***Continuous improvement:***

Corrective and preventive actions. Environmental audit.  
Management review.

The same 4 parts are also for Quality Management System:

- a) It is more easily to understand EMS if QMS is already introduced
- b) Due to similarity of structure the Integrated Management systems are established

# What could be important: to show Benefits of EMS at enterprise

## **# The overall assessment of all environmental aspects**

- creates preconditions for introduction of appropriate environmental technologies;
- makes possible the elaboration of environmental programmes, thus reducing the impacts to environment

## **# Helps to improvement of current processes**

## **# Higher production/service effectiveness**

# Benefits of EMS at enterprise

**# Better relations with stakeholders – interested bodies**

**# Creates better image of organization:**

Gives confidence to society, partners (investors) that enterprise is realizing the environmental sound policy and developing the product, shows environmental performance;

**# Helps to improve the motivation for personnel**



# Benefits of EMS at enterprise

**# Satisfy the client requirements – if the enterprise is provider (better possibilities in tenders)**

**# Improves enterprise competitiveness,  
better possibilities to compete in market**

**# Reduction of environmental and industrial risks**

**# The rationale use of nature resources, less emissions,  
pollution prevention options**

## **Benefits of EMS at state (public) institution**

**# Better image of public institution for society, stakeholders**

**# Helps to show “good example” for subordinated institutions and involved personnel**

**# Helps to show “good example” for involved people – University cases**

**# Better cooperation with stakeholders**

**# Helps to improve effectiveness of provided services**

**# Helps to improve motivation for personnel**

# What could be important : **to show preconditions** for implementation of EMS

## **External:**

- requirements **from Legal acts** and sectorial regulations;
- requirements **from external stakeholders** (cooperation partners);
- **available information** about MS and training possibilities;

## **Internal:**

- **decision and initiative** of enterprise top management on starting MS;
- **personnel competence** on MS;
- **already existing MS** at enterprise;
- **financial and technical** resources;

What could be important : to demonstrate  
the planning steps for starting of EMS

- Co-ordination **with top- management** – very important decision: to start or not;
- **Nomination of responsible persons** – Environmental management group manager;
- Identification of **training needs**, elaboration of training programmes;
- .....
- .....

## Module 2 - Analysis of Resources

Principally the content and teaching methodology of Module 2 is OK, we see that there are two principal parts :

a) legal requirements and b) environmental problems / aspects.

- The legal requirements on national level are good reflected.

I would like to recommend to add the following content items:

- to speak about two types of environmental aspects (direct and indirect) and
- to discuss environmental aspects - most current for the certain enterprise and/or university;

## Module 2 - Analysis of Resources

I would like to recommend to add the following content items:

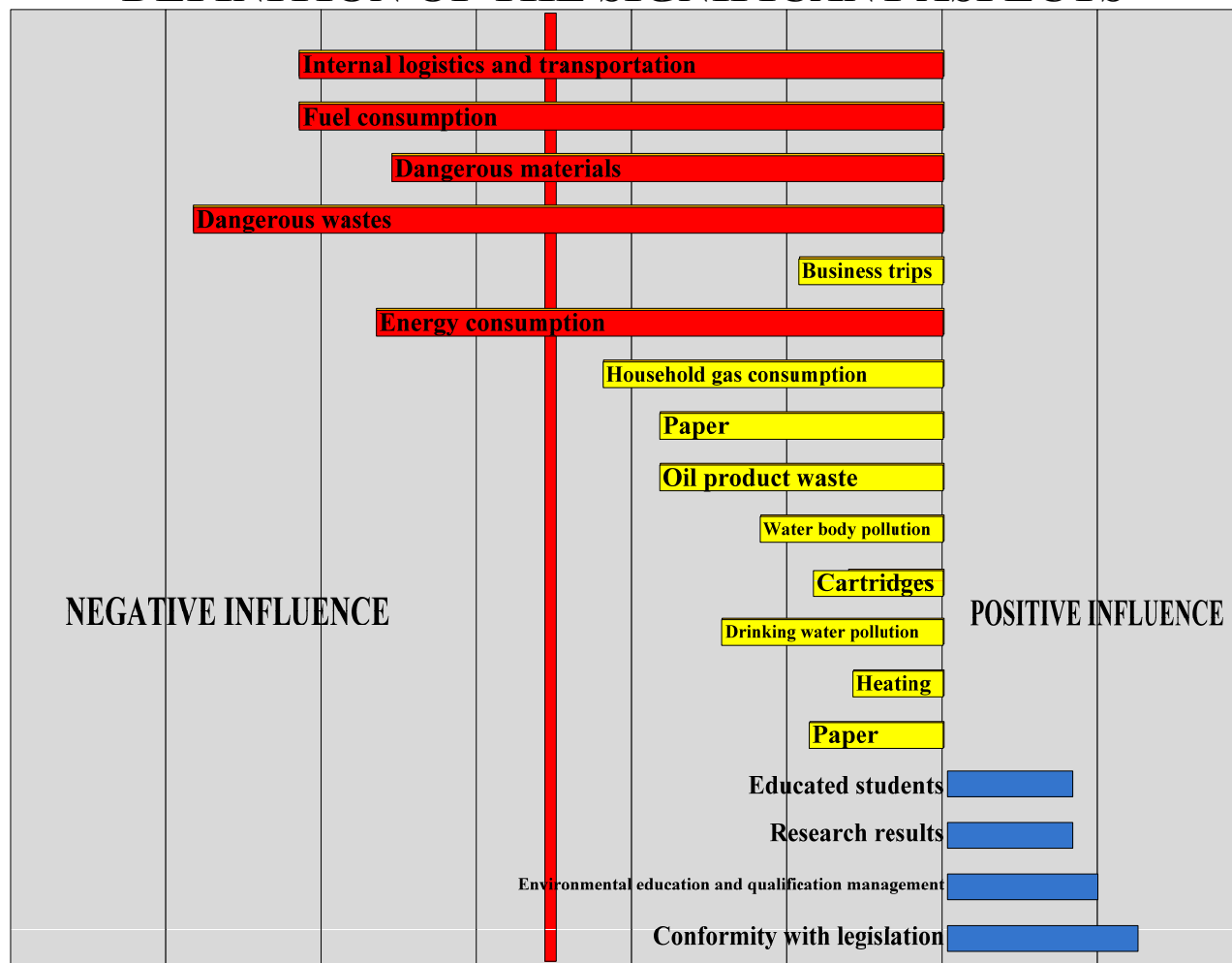
- to be able to prioritise the most important environmental aspects using the particular criteria at certain enterprise and/or university;

*Which criteria we could use:*

- a) frequency of environmental impact;
  - b) volume/amount of environmental impact;
  - c) relevance – significance of environmental impact (for inst. toxicity)
- to show the link (relationship) between legal requirements and definition of environmental aspects (problems).



## DEFINITION OF THE SIGNIFICANT ASPECTS



-120

-100



-80

-60

-50

-40

-20

0

+20

+40

## Module 2 - Analysis of Resources

### Methodology:

- the seminar/discussion on identification (using check lists);
- and prioritisation of current environmental aspects at certain enterprise and/or university (using particular criteria) could be very recommendable

The finding and discussion of specific/current environmental aspects for any target group could be important



# Structure of environmental aspects – University of Latvia case

Environmental aspects regarding to:

- management issues in building (mainly direct impacts and “-”)
- study process (mainly indirect impacts and “+”)

Environmental aspects - management issues in building  
(office) in the area of:

- water management;
- energy management;
- indoor environment and waste management;

Environmental aspects - study process in the area of:

- study and research;
- environmental awareness and social-economic development;

# Module 3

## Environmental policy and programmes



The content of Module 3 in general scale follows the stated requirements.

I would like to recommend to add the following items:

- the link between environmental aspects – policy – objectives - programmes  
(to demonstrate that link and to discuss and analyse practical/current cases)
- the demonstration and discussion on environmental policies  
(case examples) from other enterprises and /or universities

# Module 3

## Environmental policy and programmes



I would like to recommend to add the following items:

- the ability to formulate the principal issues of enterprise and /or university Environmental policy - that is really difficult task;

The abovementioned items could be practically solved in seminars, group works.

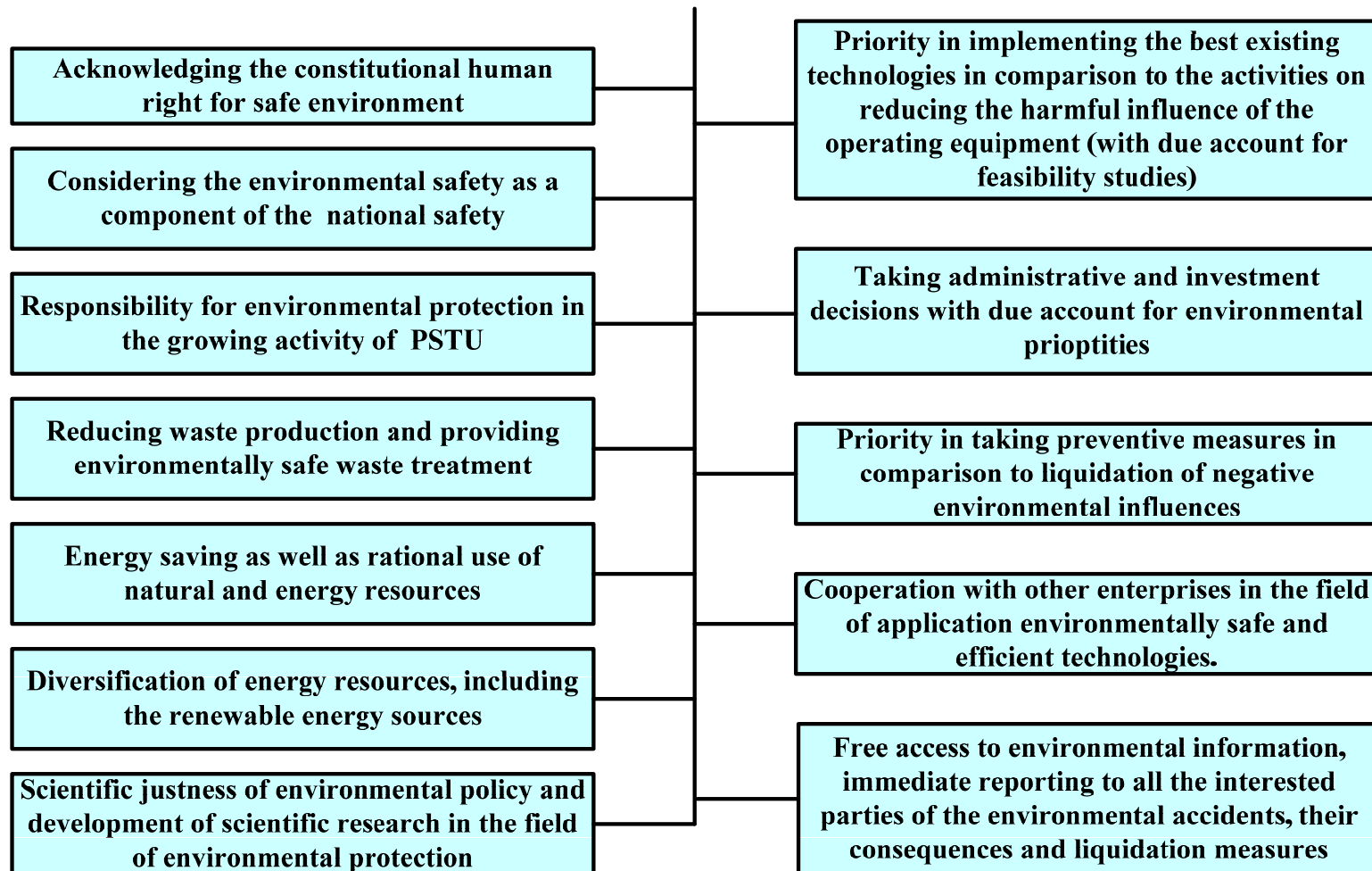
The elaboration of enterprise and /or university Environmental policy could be advisable home task.

The Environmental policy should satisfy:

- the compliance with ISO 14001 (structure and content)
- the link between environmental aspects, as well as, objectives should resulted from policy
- quality aspects – credibility, clearness, laconism;



The fundamental principles of PSTU environmental policy are:



# Module 4 – EMS Manual



I would like to put attention to the recommendations from H. Wagener (from his report):

- Значение и требования к экологическому руководству
- Идентификация релевантных для окружающей среды процессов
- Способность составить экологическое руководство для собственного предприятия

That means – more attention could be devoted to -  
Экологическое руководство.

to have the principal understanding on EMS Manual.

It is recommended to put more attention to **EMS Manual** structure:

- The general description of enterprise
- Identification of significant Environmental aspects
- Environmental policy, Environmental objectives
- Environmental programmes
- Distribution of responsibilities within EMS frame
- The used Resources
- The Procedures and Processes – (makes the largest part of Manual content)
- References to necessary documents and information resources



## Structure of the EMS Manual

PSTU					
The Environmental Management System Manual					
PK		Contents			
Edition №1		Entry date 01.03.2009		Page 2. of 89	
Approved		Authorized EMS Representative			
Call number	Title	page	Call number	Title	page
PK-1	Introduction	3	PK-7.1	Planning	41
PK-2	Regulatory references	5	PK-7.2	Working processes	44
PK-3	Terms, definitions and abbreviations	6	PK-7.3	Design and development	47
PK-4	Environmental Management System		PK-7.4	Purchases	51
PK-4.1	General provisions	10	PK- 7.5	Control of measuring equipment	64
PK-4.2	Requirements for documentation	12	PK-8	Measuring, analyses and improvement	
PK - 5	Management responsibility		PK-8.1	General provisions	67
PK- 5.1	Management commitment	19	PK-8.2	Monitoring and investigation	69
PK -5.2	Consumer orientation	21	PK-8.3	Data analyses	76
PK -5.3	Environmental management policy	23	PK-8.4	Improvements	78
PK -5.4	Planning	25	PK	EMS supplements	
PK -5.5	Inspection by the administration	31	PK-A	Process-oriented EMS model	81
PK - 6	Resources management		PK-B	Environmental management policy	81
PK -6.1	Supply of resources	33	PK-B	Major development goals of PSTU for the period of 2009-2010	83
PK-6.2	Human resources	34	PK-Г	Organizational structure of university administration	84
PK-7	Life cycle processes		PK-E	Change sheet	



## Matrix of Liability Distribution and Interaction by Documentation Control

Operation name	Name of the Department. Name of the Official.								
	Rector	Head of OMK	Pro-rector of the direction	Pro-rector of AHS	Heads of the Subdivisions	Development Contractor	Subdivisions Responsible for Control of Documentation	Secretary	Personnel Division
1	2	3	4	5	6	7	8	9	10
Environmental policy management	О	В	У	У	У	У	У	И	И
Control of SOUS Manual	И	О	У	У	У	В	И	И	И
Enterprise standard management	О	У	У	В	У	У	И	И	И
Internal and external order documents management	О	В	В	У	У	У	У	И	И
Regulatory and technical documentation management	И	И	И	О	В	У	У	И	И
Academic documentation management	И	О	У	У	У	У	У	У	У
Environmental instructions management	И	В	У	В	У	У	И	И	И
Management of regulations on subdivisions and duty regulations management	О	У	У	В	В	В	У	И	В

Letters of references **О** – is responsible for, **В** – carries out, **У** – participates, **И** – is informed.



# Module 4 – EMS Manual



Other principal issue is ability

- to define (formulate) the PROCESSES (with principal impact to environment) and
- PROCEDURES and to describe them in EMS Handbook.

Above mentioned tasks takes the majority of time necessary for elaboration of Manual

Recommendations for methodology:

- elaboration of important PROCESS description in work group and group discussion on that:

(for enterprise – the main production process

for University – study process)

# Module 4 – EMS Manual



It is important to demonstrate the place and role of EMS Manual within overall EMS documentation system.

*For example, NTU and PSTU did it.*

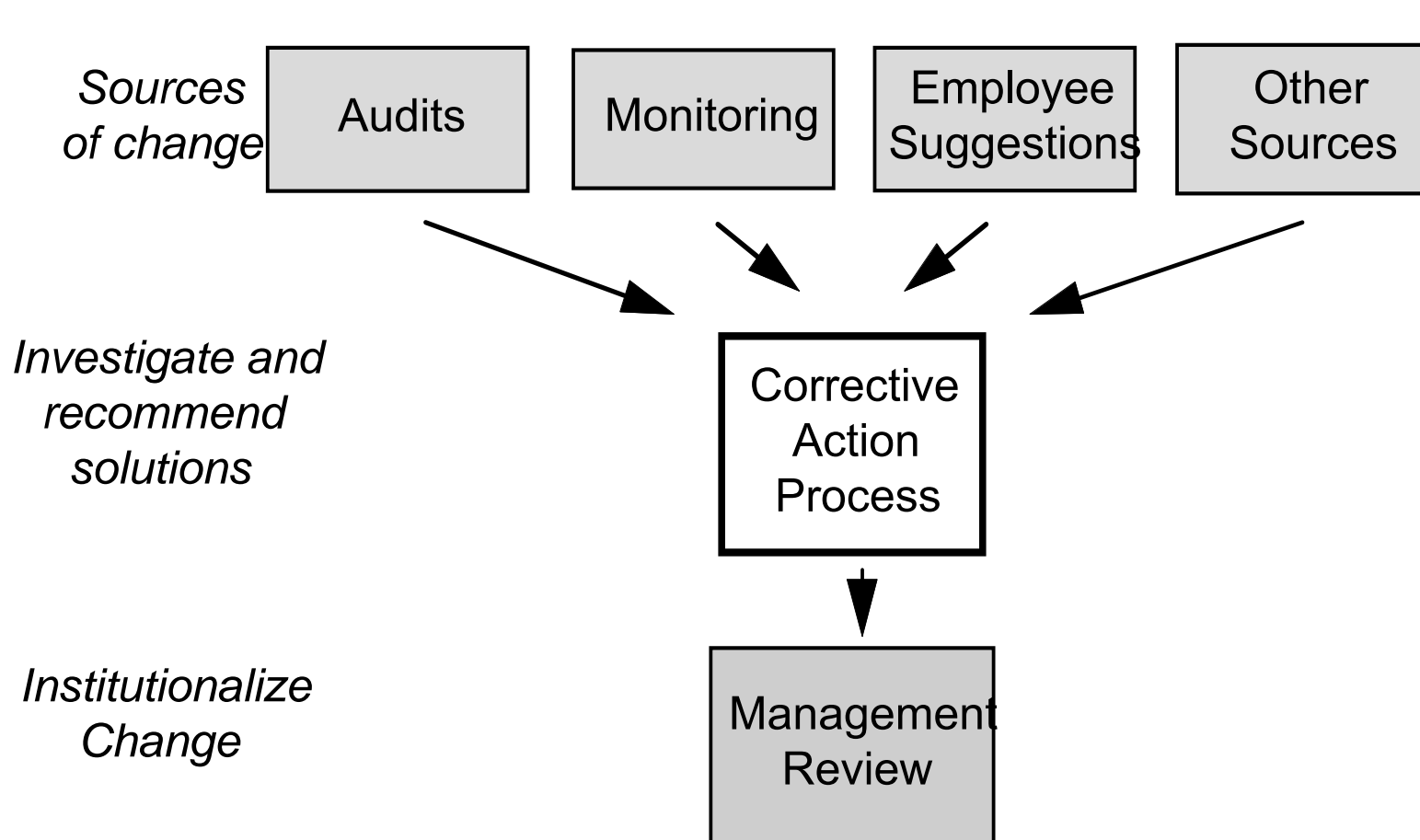
It could be recommended to see/examine the structure and content of real EMS Manual with task to find and identify various types of documents in all levels

# Module 5 - Continuous improvement

The content of Module 5 is corresponding the stated requirements and good designed, especially items on internal and certification audits.

I would like to put more attention to the formation of MANAGEMENT REVIEW and all basic sources for that:

- unconformances, which are recognized;
- recorded monitoring data on principal environmental aspects;
- results from audit;



# Module 5 - Continuous improvement



Regarding the methodology, it could be recommendable:

- the elaboration of internal audit plan (for real organization)-group work;
- the game of internal audit (to be in role of auditor) including the discussion about audit results;
- the simulation the necessary actions from enterprise side to check the readiness of enterprise for certification audit (how elaborated Procedures should be verified before audit) - group work;

# The necessary auditor qualifications

- knowlege on audit procedure and the corresponding branch;
- overtness, desire to take in a matter;
- ability to listen;
- ability to analyse the complex information;
- ability to follow audit plan;
- ability to be flexible in stress situations;

# Methodological aspects



The training programme should include **study methods**:

- lectures,
- seminars with lecturers; discussions; case studies,
- group works, independent works,
- home tasks,
- EMS document analysis,
- control questions and exercises (the package/set of control questions should be recommendable) – *NTU did it*;
- role games;