NEW OCCUPATIONAL STANDARD "SUSTAINABLE DEVELOPMENT MANAGER", A PILAR OF THE DEVELOPMENT OF ALTERNATIVE TECHNOLOGIES IN THE CONTEXT OF SMART SUSTAINABLE INTEGRATED DEVELOPMENT

Oprean Constantin [1], Ţîţu Mihail Aurel [2], Pîrnău Claudiu [3] and Vanu Mihaela Alina [4]
[1] "Lucian Blaga" University of Sibiu, presedinte@ulbsibiu.ro
[2] "Lucian Blaga" University of Sibiu, titu.mihail@gmail.com
[3] Total School Association, claude.pyr@gmail.com
[4] "Lucian Blaga" University of Sibiu, alina.vanu@ulbsibiu.ro

ABSTRACT: The key component of sustainable development is that development should be a balance between environmental, social and economic considerations to be sustainable. Professional competence integrates knowledge, understanding, skills and values. It goes beyond the ability to perform specific tasks. Occupational standards and related training standards and assessments are an essential link between workplace employment requirements and human capital development that affect individual citizens throughout their life span. Occupational standards can make a major contribution to the design of high-quality education and training programs by ensuring they are directly linked to the needs of the workplace and overall economy. Standards have both economic and social outcomes. Many countries have taken specific steps to develop occupational and training standards, and some are beginning to develop cross-national approaches and benchmark national standards to international requirements. Sustainable development strategy of an organization is not only reflected in the increase in the production value of the organization, but should be evaluated together with other aspects such as economic effectiveness, utilization of resources, occupational health and safety, and environmental protection.
KEY WORDS: Sustainable development, alternative technologies, environmental policy, sustainable networks, environment, recycling

1 INTRODUCTION

Sustainable development is a concept that defines a form of economic growth that ensures an appropriate level of welfare not only on short or medium term, but also on long term. Sustainable development is the development that aims to meet the needs of the present without compromising the abilities of future generations to meet own needs (Brundtland Report).

The "Senior Sustainable Development Manager /Expert" is an important "boss" in many companies, such as Rolls-Royce, Coca-Cola, Apple, Renault, Lafarge or Heineken.

Occupation "Sustainable development manager" is accessible to any university graduate (with technical, economic or equivalent specialization) that meets the following conditions:

- worked for at least 5 years in industry, construction, services (including research);
- has a green conscience;
- has practical experience of at least 2 years training (CVT or equivalent);
- has practical and theoretical experience regarding psychology of human resources, individual and social creativity;
- has been trained, qualified and certified / registered according to recognized procedures (taking as reference the present Occupational Standard).
- The main characteristics of sustainable development manager are:
- ability to be visionary / aware / realistic in terms of the potential risks of implementing sustainable integrated intelligent management (to minimize them through appropriate policies and measures) and Knowledge Management;
- ability and willingness to learn continuously;
- ability to think in abstract terms (conceptual skills);
- ability to analyze and synthesize (analytical skills);
- ability to assess a situation and determine causes;
- communication and negotiation skills;
- team building skills;
- labor power and resistance to intense job stress.

Occupation "Sustainable development manager" means, in addition to detailed knowledge about the processes of change, innovation and management (general /based on knowledge), mastery of complex knowledge: technological, environmental, psychological, educational as well as economic,

scientific and general culture, knowledge of communication, marketing and negotiation.

Framework activities to be conducted by this category of managers, are:

- Develop specific elements of the sustainable development strategy of the company resulting from the environmental audit and / or lifecycle analysis of products / services;
- Implementation of achieving sustainable development strategy of the company;
- Monitoring indicators of sustainable development processes;
- Coordination of activities on education for sustainable development;
- Implementing knowledge management and sustainable transformation of its values;
- Implementing environmental policies in product design, recycling and waste management;
- Coordination of green procurement;
- Implement measures to improve the environmental performance of products (product footprint - PEF);
- Implement measures to improve the environmental performance of the organization (the organization's ecological footprint - OEF);
- Develop methods and coordination of activities to increase environmental awareness of employees;
- Coordinate activities necessary to implement the environmental policy of the organization;
- Implementing sound policies for sustainable development;
- Analysis of the conditions of maximum sustainable consumption;
- Evaluate and coordinate the key cross disciplinary, involved in sustainable development;
- Implementation of intelligent systems of processing and sharing knowledge;
- Coordinate lobbying for sustainable development;
- Elimination of unsustainable consumption and production patterns.

Occupational standard for "Sustainable development manager" is applicable to any company/ organization, regardless of the field of activity.

2 LIST OF COMPETENCY UNITS

Training standard is a structured document on competence units (see Table 1), which describes in terms of learning outcomes what a participant in a training program must demonstrate at its completion [1]. The standard of professional training includes:

- Name of qualification, as reflected in Government Decision approving the qualification nomenclatures which provides pre-university education;
- Level of qualification. Skill levels that can be acquired through vocational and technical education are: 1, 2, 3, 3 advanced levels corresponding to 2, 3, 4 and 5 EQF;
- Job description. In a few sentences there are presented specific activities that are representative for qualification;
- The list of competence units that make up the qualification and number of credits allocated to each of them. Competence units are a coherent and explicit set of skills. Competencies describe those things that individuals need to know, to understand or to be able to achieve at the end of a process of education and training outcomes.

"Clean" market demand on sustainable green skills needs, is presented in Figure 1 [adapted from 2]:

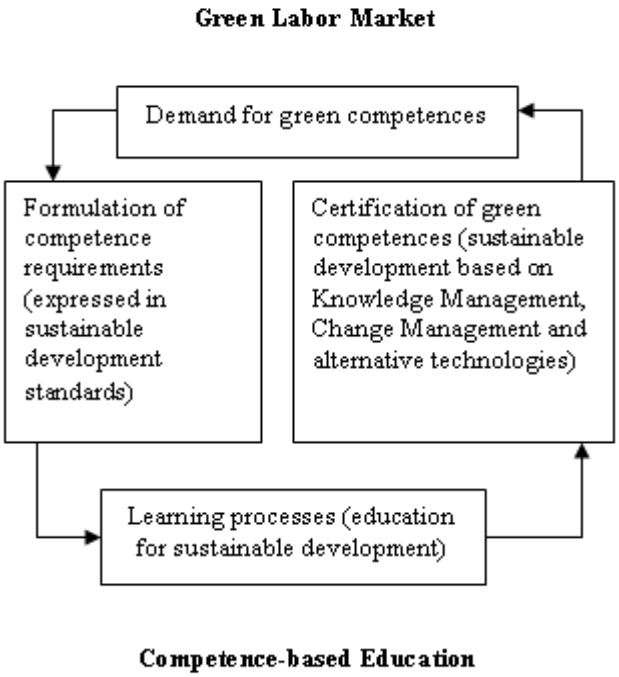

Figure 1. The feedback-loop between the green labor market and education for sustainable development

The list of competence units is organized as follows:

- Key competences. Key competence units cover transferable skills to support the labor market integration and social inclusion;
- General technical skills. General technical competency units are considering skills targeting principles and context as well as common practices that background more skills. They are common to several qualifications in training;

- Specialized technical skills. Specialized technical competence units include specific skills connected to that qualification.

Summary description for units of competency includes:

- Title of power unit;
- Level of qualification: a unit of competency may have one of levels 1, 2, 3, 3 advanced levels corresponding to 2, 3, 4, 5 EQF. Other levels of the 5 levels currently existing in Romania are associated skills acquired through higher education, appropriate levels 6, 7, 8 EQF;
- Number of credits: The unit of credit is granted for units of competence, which are reasonably incurred to be obtained by the individual within 60 hours of learning. A unit of competency may be between 0.5 and 2 credits;
- List of skills;
- Competencies. For each jurisdiction are specified:
  - Description of competence: short and concise statement of what an individual needs to know and / or understand and / or be able to do after learning;
  - Performance criteria: description of the significant elements of successful outcomes, description formulated through one sentence of evaluation, which allows an assessment of students' achievement or failure of competence;
  - Details on the applicability of performance criteria (conditions of application): specifications for different situations and contexts in which performance criteria will be applied;
  - Assessment evidence: details of the type of evidence that highlight and demonstrate the fulfillment of the competence.

3 CONTEXT OF THE ACTIVITIES OF SUSTAINABLE DEVELOPMENT MANAGER (SELECTION)

Information management (general competence) requires a diverse work, at home or on the computer, operating with a variety of data types and sources of information, teamwork and individual. Sustainable Development Manager role at this stage is to retrieve information from internal and external environment and to transmit them in a processed form, to the departments concerned. In the first stage, there are identified all sources of information / relevant documentation and collect data on the life cycle of the product / durable service, product matrix provided, then they are processed, analyzed and structured in the form of a report that is disseminated to all interested parties. The person holding the office of "sustainability manager" can lead an interdisciplinary team, cross-functional, with continuous responsibilities, composed of members of various departments of the organization and / or external collaborators (based on partnership, etc.) Priorities may be at the department level and at the individual level. Sustainability manager can use various tools to identify priorities such as ABC (Eisenhower) or ABCDE method (Brian Tracy) or other tools, which are familiar. Self-development should take into account both the organization's goals and aspirations and employee's potential. Self-development can be achieved in programs provided by the organization or in other types of training and development identified independently by the manager of sustainable development. Self-development can be focused on technical skills (based on alternative technologies) and managerial skills (starting from knowledge management). Sustainable Development Manager will be a member of the "Committee of Safety and Health at Work" as OSH activities are an integral part of environmental policy of the firm.

Table 2. The list of competency units

The list of competency units	Level of responsibility and autonomy CNC/EQF
Key competency units:	
Title of the unit 1: Communication in the official language;	4/5
Title of the unit 2: Communication in foreign languages;	3/4
Title of the unit 3: Basic skills in Mathematics, Science, Technology;	3/4
Title of the unit 4: IT skills;	3/4
Title of the unit 5: The skill of learning;	4/5
Title of the unit 6: Civic and social skills;	3/4
Title of the unit 7: Entrepreneurial skills;	4/5
Title of the unit 8: Cultural expression skills;	3/4
General competency units:	
Title of the unit 1: Making information management;	3/4
Title of the unit 2: Team management;	3/4
Title of the unit 3: Self management activity;	4/5
Title of the unit 4: Occupational safety and health, environmental protection and SFP (security and fire protection).	3/4
Specific competency units:	
Title of the unit 1: Portfolio development of sustainable connections and networks of collaborative links;	4/5
Title of the unit 2: Sustainable development strategy of the company;	5/6
Title of the unit 3: Implementation plan for	5/6

The list of competency units	Level of responsibility and autonomy CNC/EQF
achieving sustainable development strategy of the company;	
Title of the unit 4: Coordination of activities on education for sustainable development in the organization;	4/5
Title of the unit 5: Implementation of smart sustainable integrated development and knowledge management in the company;	5/6
Title of the unit 6: Environmental policy implementation in product design, use of alternative technologies, recycling and waste management;	4/5
Title of the unit 7: Implementation of measures to improve the environmental performance of products (product footprint - PEF);	4/5
Title of the unit 8: Implementation of measures to improve the environmental performance of the organization (the organization's ecological footprint - OEF);	4/5
Title of the unit 9: Implementation of Knowledge Assessment Methodology (KAM), for sustainable development in general, and alternative technologies, in particular;	5/6
Title of the unit 10: Implementation of intelligent systems for processing and sharing knowledge;	5/6
Title of the unit 11: Promoting eco-smart development, Eco-Innovation, Clean Technology, Sustainable Goods and Services;	3/4
Title of the unit 12: Real-time monitoring and reviewing of risks in sustainable development processes;	5/6
Title of the unit 13: Monitoring compliance with standards on the use of alternative / unconventional technologies.	3/4

4 PRESENT VARIABLES IN THE "SUSTAINABLE DEVELOPMENT MANAGER" ACTIVITIES

Legislation, codes and national/international standards, relevant for work place such as: issues related to industry-environmental pollution relation, including agreements and contracts; national or local legislative requirements, particularly regarding the use of renewable energy sources, waste storage and recycling, safety and health at work, codes of good practice in the industry.

Sources of data and information are: correspondence (electronic or printed); computer information (specialized websites, scientific works); works with statistical data (monthly / annual forecasting, accomplished targets); forms (different types of contracts, partnerships, etc.); invoices (from suppliers and beneficiaries); sustainable development plans, environmental audit reports, budgets to promote sustainable products / services and sustainable consumption; financial results; production estimations; efficiency and effectiveness of alternative technologies.

Data collection techniques are varied and range from applied questionnaires in the fields of interest to other surveys conducted with own resources or through agencies.

Examples of techniques of data collection: interviews with clients and colleagues; recruitment applications or other forms of theirs; information from other organizations; previously recorded files; comments and obedience; checking written material including reports and records from customers; personal or indirect questionnaires; individual research; checking research coming from other sources. Equipment used include: copiers, computers, and fax.

Data collection is intended to: hypothetical testing, diagnostics situations, identify trends, map of processes, comparative analysis, pricing award policies.

For data collection and information you may use primary sources and secondary sources. Primary sources are based on product type, which is investigated or intended to be released: children, adults, urban, rural, etc.

Collecting instruments used may be: investigation, simulation, market or competitive research. Data analysis tools may be factor analysis, multiple regression method or other tools, depending on the complexity of the situation.

Types of information may be primary, intermediate and final depending on the stage of collection time and processing stage. In the concluded report, the manager of sustainable development must first present the information that will form the basis for decisions top managers (or other decision makers).

Reports generated by a sustainable development manager may have only an informative purpose and may be a decision support for the elimination, improving or creating a product / service.

To plan his priorities, sustainable development manager may use planning tools specific to organization or individual (Gantt chart, calendar, Lotus Notes, etc.).

In setting his priorities, sustainable development manager must consider both his own goals as well as objectives of other departments / outlets.

Targets are set at the beginning of the year and they can be related to increasing requests for a certain range of products, increase or maintained interest in sustainable products, compliance with deadlines of some sustainable development projects, the value of innovations introduced, etc.

5 CONCLUSIONS AND INTENTIONS

Elaboration of sustainable development strategies is one of the most important steps to support processes of local, national and international development. In essence, this type of strategy clarifies the medium and long term directions and areas development efforts of the organization are oriented to and hence of the society. Sustainable development strategies are characterized by at least seven features: picture of the future, creativity, flexibility, employment, social division of labor, orientation towards change and a sustainable earning. In this context, the activities of sustainable development manager should be focused on three main areas of networking [3], as shown in Table 2.

Table 3. Activity sheet

Sustainable society	„Clean" environment	„Green" economy
Demography	Water	Food
Homes	Air	Industry
Medical services	Pedological fund	Local economy
Poverty	Waste	Global economy
Culture	Pollution	Jobs
Policy	Habitat	Markets

Activity of a sustainable development manager, based on a "long-term thinking", may contribute significantly to the positive development of communities, including the implementation of alternative technologies (primarily contributing to reduce global warming), following the UK model, where in 2005 there was founded "Academy for Sustainable Communities" based on opportunities and local sustainable development strategies (local strategic partnerships) [4]. At European level and beyond, it is necessary to implement certain international projects that reflect not only the economic development level, but also skills needed at work, educational concepts and roles of key political and administrative factors involved. [5]

A green strategy, or a clean technology, must be implemented under the supervision of a resident sustainable development manager, and social and community affairs should be managed by an experienced staff member in a dedicated senior post.

The sustainable development team is responsible for setting strategy and policy for the firm and working with all the regional companies to engage them in the priorities relevant to them.

Value for money and sustainable development considerations go hand in hand, focussing on whole life costs and benefits, from acquisition and running costs through to disposal. Factors to assess include: direct and indirect resource use, including energy; investing to save revenue costs; re-use of products, and using refurbished, recycled or recyclable products; and the costs of disposal.

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