



**B&B COLLEGE**  
OF SUSTAINABLE DEVELOPMENT

Mednarodna konferenca  
Izzivi trajnostnega razvoja  
B&B Visoka šola za trajnostni razvoj

International Conference  
Challenges of Sustainable Development

B&B College of Sustainable Development

20. 9. 2019, Ljubljanska cesta 30, Kranj, Slovenia

Izzivi trajnostnega razvoja

Challenges of Sustainable Development

**Zbornik prispevkov**

Urednica: mag. Maja Zalokar

Kranj: B&B Visoka šola za trajnostni razvoj, 2019

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## Program konference

09.30–10.00 – Prihod in registracija

10.00–10.20 – Otvoritev in pozdravni nagovor (dekan mag. Branko Lotrič in direktorica mag. Maja Zalokar)

10.20 – Sašo Gorjanc: Projekt Beech Power

### I. Sekcija Zeleneča andragoška spoznanja 1 (A1)

10.30–11.45

Moderator: Mag. Maja Zalokar

- 1. Opredelitev učinkovitosti izobraževanja odraslih**  
Mag. Maja Zalokar, B&B Visoka šola za trajnostni razvoj
- 2. Motivacijski vidiki učnih aplikacij pri pouku nemščine**  
Mag. Rosvita Šengelaja, B&B izobraževanje in usposabljanje, Višja strokovna šola
- 3. Kdo je boljši?**  
Helen Žerovec, Native English Teacher
- 4. Spremljanje kakovosti podpore, ki jo učitelji nudijo odraslim udeležencem izobraževanja**  
Mag. Maja Zalokar, B&B Visoka šola za trajnostni razvoj

### II. Sekcija Varstvo okolja skozi oči organizacij 1 (B1)

10.30–12.00

Moderator: Tatjana Čeh Naglič

- 1. ECO KARST – zavarovana območja in naravi-prijazna podjetja**  
Mag. Sašo Gorjanc, Zavod za gozdove Slovenije
- 2. MEDCIS – naproti skupnemu in koordiniranemu varovanju evropskih morij**  
Mag. Sašo Gorjanc, Zavod za gozdove Slovenije
- 3. Izobraževanje preko spleta: prihodnost »zelenega« učenja jezikov**  
Nicola Patrone, Michael Reidy, Patrone & Reidy Languages
- 4. Okoljska komunikacija**  
Tatjana Čeh Naglič, B&B Visoka šola za trajnostni razvoj
- 5. Izzivi, s katerimi se spopada Nemčija, ko poskuša doseči svoje podnebne cilje do leta 2030 in obnoviti svoje zeleno znanje**  
Elijah Sriroshan Sritharan, MSc, PhD candidate at University of Exeter, England

### **III. Sekcija Ekonomija za trajnostni razvoj (C1)**

**10.30–11.45**

Moderator: Mag. Branko Lotrič

- 1. Ekonomija za trajnostni razvoj**  
Nada Medved, Srednja frizerska šola Ljubljana
- 2. Poskus povezave trajnostnega razvoja in obvladovanje premoženja (vzdrževanja)**  
Mag. Viktor Jemec, Društvo vzdrževalcev Slovenije, dr. Damjan Maletič, FOV Maribor
- 3. Sistem ohranitvenega razvoja**  
Mag. Branko Lotrič, B&B Visoka šola za trajnostni razvoj
- 4. Kritične varnostne grožnje spletnim stranem in zaščita pred njimi**  
Mag. Roman Rehberger, Šolski center Kranj, Višja strokovna šola

### **IV. Sekcija Zeleneča andragoška spoznanja 2 (A1)**

**12.30–14.00**

Moderator: Klemen Sušnik

- 1. Internacionalizacija izobraževalnega centra B&B in učinki mobilnosti**  
Klemen Sušnik, B&B izobraževanje in usposabljanje d.o.o.
- 2. Informacijska pismenost starih ljudi v Sloveniji**  
Dr. Barbara Grintal, Gerontološki raziskovalni inštitut
- 3. Sodobni tematski poudarki in zagate v obravnavi slovenskih vojaško-zgodovinskih vsebin za oblikovanje slovenskih vojaških tradicij**  
Dr. Valerija Bernik, Center vojaških šol
- 4. Pogled delodajalcev na znanja in kompetence diplomantov višjih strokovnih šol**  
Mag. Marina Vodopivec, BIC Ljubljana
- 5. Poučevanje in ocenjevanje pri izobraževanju odraslih – usmerjenost k uspehu**  
Dr. Vojko Obrulj, B&B izobraževanje in usposabljanje, Višja strokovna šola

### **V. Sekcija Varstvo okolja skozi oči organizacij 2 (B1)**

**12.30–14.00**

Session Chair: Tatjana Čeh Naglič

- 1. Smernice trajnostnega razvoja v humanitarnih in razvojnih projektih mednarodne mreže ADRA: praktičen primer projekta v Mongoliji**  
Katja Kotnik, ADRA Slovenija
- 2. Trajnostni razvoj in kulturne razlike**  
Dr. Helena Povše, HP Consulting
- 3. Agroekologija kot alternativni razvojni model**  
Annelie Bernhart, M.Sc., University of Oxford, Department of Geography and the Environment

**4. Reciklažna delavnica**

Tereza Kouřilová, RECIKLAŽA, šivanje recikliranih izdelkov, Tereza Kouřilová, s.p.

**5. Okoljevarstvene zahteve pri razvijanju proizvodov**

Janez Dulc, B&B izobraževanje in usposabljanje, Višja strokovna šola

**VI. Sekcija Trajnost oskrbovalnih verig (C1)**

**12.30–14.00**

Moderator: Mag. Branko Lotrič

**1. Trajnostno upravljanje oskrbovalnih verig**

Dr. Matjaž Štor, Štore Steel d.o.o.

**2. Izzivi pri transportu temperaturno občutljivega blaga**

Nataša Sodja, LOTRIČ Meroslovje d.o.o.

**3. Pomen razvoja tehnologij za izvedbo logistike prvega in zadnjega kilometra prevoza blaga za razvoj pametnih mest**

Mag. Branko Lotrič, B&B Visoka šola za trajnostni razvoj

**4. Varnost oskrbovalnih verig glede na poreklo groženj in tveganj**

Dr. Gregor Garb, Samostojni raziskovalec

**5. Trajnost oskrbovalnih verig**

Ajda Lotrič, Student at Tampere University of Applied Sciences, Finland

**6. Analiza prehranskih oskrbovalnih verig z vidika okoljskega odtisa**

Dr. Marijan Pogačnik, Biotehniški center Naklo

**VII. Sekcija Zelena energija (D2)**

**12.30–14.00**

Moderator: mag. Muharem Husić

**1. Krožno gospodarstvo**

Mag. Alenka Burja, Okoljsko svetovanje, s.p.

**2. Trajnostno ravnanje s komunalnimi odpadki v mestni občini ljubljana – primer dobre prakse**

Mag. Muharem Husić, B&B Visoka šola za trajnostni razvoj

**3. Cenovna gibanja energentov za ogrevanje gospodinjskih uporabnikov**

Dr. Drago Papler, B&B Visoka šola za trajnostni razvoj

**4. Gospodarna zamenjava načina ogrevanja zgled lokalne skupnosti za osveščanje občanom**

Dr. Drago Papler, B&B Visoka šola za trajnostni razvoj

**5. Poslovni procesi komunalnih podjetij v luči odgovornega ravnanja s pitno vodo**

Katarina Adžaga Uršič, mag., E.R.S. Rokada, d.o.o.

**6. Bioplin kot alternativni vir energije**

Mitja V. Bavdaž, Metanium d.o.o.

## **14.30–15.15 – Od mentoriranja do raziskovanja (B1, okrogla miza)**

Govorili bomo o dobrih praksah mentorjev v podjetjih in njihovem pomenu pri spodbujanju nadaljnjega raziskovanja.

### **Conference Program**

09.30–10.00 - Arrival and Registration

10.00–10.20 - Opening and Welcome Address (Dean mag. Branko Lotrič and Director mag. Maja Zalokar)

10.20 - Sašo Gorjanc: Project Beech Power

#### **I. Section Green Andragogical Issues 1 (A1)**

**10.30–11.45**

Session Chair: Mag. Maja Zalokar

**1. Defining the Effectiveness of Adult Education**

Mag. Maja Zalokar, B&B Visoka šola za trajnostni razvoj

**2. Motivational Aspects of Learning Applications in German Lessons**

Mag. Rosvita Šengelaja, B&B izobraževanje in usposabljanje, Višja strokovna šola

**3. Who does it better?**

Helen Žerovec, Native English Teacher

**4. Monitoring the Quality of Support that Teachers Provide to Adult Learners**

Mag. Maja Zalokar, B&B Visoka šola za trajnostni razvoj

#### **II. Section Protecting the Environment Through the Eyes of Organizations 1 (B1)**

**10.30–12.00**

Session Chair: Tatjana Čeh Naglič

**1. ECO KARST – Protected Areas and Pro-Biodiversity Businesses**

Mag. Sašo Gorjanc, Zavod za gozdove Slovenije (Slovenia Forest Service)

**2. MEDCIS – Towards a Common and Coordinated Protection of European Seas**

Mag. Sašo Gorjanc, Zavod za gozdove Slovenije (Slovenia Forest Service)

**3. Online Education: The Future of “Green” Language Learning**

Nicola Patrone, Michael Reidy, Patrone & Reidy Languages

**4. Environmental Communication**

Tatjana Čeh Naglič, B&B Visoka šola za trajnostni razvoj

**5. The Challenges that Germany Face as it Tries to Achieve its 2030 Climate Goals and Restore its Green Credentials**

Elijah Sriroshan Sritharan, MSc, PhD candidate at University of Exeter, England

### **III. Section The Economy of Sustainable Development (C1)**

**10.30–11.45**

Session Chair: Mag. Branko Lotrič

**1. Economy for Sustainable Development**

Nada Medved, Srednja frizerska šola Ljubljana

**2. An Attempt to Link Sustainable Development and Asset Management (Maintenance)**

Mag. Viktor Jemec, Društvo vzdrževalcev Slovenije, dr. Damjan Maletič, FOV Maribor

**3. Conservation Development System**

Mag. Branko Lotrič, B&B Visoka šola za trajnostni razvoj

**4. Critical Security Threats to Websites and Protection Against Them**

Mag. Roman Rehberger, Šolski center Kranj, Višja strokovna šola

### **IV. Section Green Andragogical Issues 2 (A1)**

**12.30–14.00**

Session Chair: Klemen Sušnik

**1. Internationalization of B&B Education Center and the Effects of Mobility**

Klemen Sušnik, B&B izobraževanje in usposabljanje d.o.o.

**2. Information Literacy Among the Elderly in Slovenia**

Dr. Barbara Grintal, Gerontološki raziskovalni inštitut

**3. Modern Highlights and Dilemmas in Discussing Slovenian Military-Historical Themes to Create Slovenian Military Traditions**

Dr. Valerija Bernik, Center vojaških šol

**4. Employers' Perspective on Knowledge and Competencies of College Level Graduates**

Mag. Marina Vodopivec, BIC Ljubljana

**5. Teaching and Evaluation in Adult Education – Oriented to Success**

Dr. Vojko Obrulj, B&B izobraževanje in usposabljanje, Višja strokovna šola

### **V. Section Protecting the environment through the eyes of organizations 2 (B1)**

**12.30–14.00**

Session Chair: Tatjana Čeh Naglič

**1. Sustainable Development Trends in Humanitarian and Development Projects of International Network ADRA: Practical Case of a Project in Mongolia**

Katja Kotnik, ADRA Slovenija

**2. Sustainable Development and Cultural Differences**

Dr. Helena Povše, HP Consulting

**3. Agroecology as an Alternative Development Model**

Annelie Bernhart, M.Sc., University of Oxford, Department of Geography and the Environment

#### **4. Recycling Workshop**

Tereza Kouřilová, RECIKLAŽA, šivanje recikliranih izdelkov, Tereza Kouřilová, s.p.

#### **5. Environmental Product Development Requirements**

Janez Dulc, B&B izobraževanje in usposabljanje, Višja strokovna šola

### **VI. Section Sustainability of Supply Chains (C1)**

**12.30–14.00**

Session Chair: Mag. Branko Lotrič

#### **1. Sustainable Supply Chain Management**

Dr. Matjaž Štor, Štore Steel d.o.o.

#### **2. Challenges in Transporting Temperature-Sensitive Goods**

Nataša Sodja, LOTRIČ Meroslovje d.o.o.

#### **3. The Importance of Developing Technologies for the Implementation of Logistics of the First and Last Kilometer of Goods Transportation for the Development of Smart Cities**

Mag. Branko Lotrič, B&B Visoka šola za trajnostni razvoj

#### **4. Security of Supply Chains Based on the Origin of Threats and Risks**

Dr. Gregor Garb, Samostojni raziskovalec

#### **5. Sustainability of Supply Chains**

Ajda Lotrič, Student at Tampere University of Applied Sciences, Finland

#### **6. Analysis of the Food Supply Chains from an Environmental Footprint Perspective**

Dr. Marijan Pogačnik, Biotehniški center Naklo

### **VII. Section Green Energy (D2)**

**12.30–14.00**

Session Chair: Mag. Muharem Husić

#### **1. Circular Economy**

Mag. Alenka Burja, Okoljsko svetovanje, s.p.

#### **2. Sustainable Municipal Waste Management in Ljubljana Municipality - A Case of Good Practice**

Mag. Muharem Husić, B&B Visoka šola za trajnostni razvoj

#### **3. Price Movements of Energy Products for Heating Household Users**

Dr. Drago Papler, B&B Visoka šola za trajnostni razvoj

#### **4. Economic Replacement in the Way of Heating is an Example of Local Community for Raising Public Awareness**

Dr. Drago Papler, B&B Visoka šola za trajnostni razvoj

#### **5. Utility Companies' Business Processes from the Aspect of Responsible Drinking Water Management**

Katarina Adžaga Uršič, mag., E.R.S. Rokada, d.o.o.

#### **6. Biogas as an Alternative Source of Energy**

Mitja V. Bavdaž, Metanium d.o.o.



## **14.30–15.15 - From Mentoring to Research (B1, roundtable)**

We will talk about good practices of mentors in companies and their importance in encouraging further research.

### **Udeleženci konference po državah – Conference participants by country**

#### **Velika Britanija (GB)**

Elijah Sriroshan Sritharan, MSc

Helen Žerovec

#### **Nemčija (D)**

Annelie Bernhart, M.Sc.

#### **Češka (CZ)**

Tereza Kouřilová

#### **Italija (I)**

Nicola Patrone

#### **Irska (IE)**

Michael Reidy, CELTA

#### **Slovenija (SI)**

Mitja V. Bavdaž

Dr. Valerija Bernik

Mag. Alenka Burja

Tatjana Čeh Naglič

Dr. Gregor Garb

Mag. Sašo Gorjanc

Dr. Barbara Grintal

Mag. Muharem Husić

Mag. Viktor Jemec

Katja Kotnik

Ajda Lotrič

Mag. Branko Lotrič

Nada Medved

Dr. Vojko Obrulj

Dr. Drago Papler

Dr. Marjan Pogačnik

Dr. Helena Povše

Mag. Roman Rehberger

Nataša Sodja

Klemen Sušnik

Mag. Rosvita Šengelaja

Dr. Matjaž Štor

Katarina Uršič Adžaga, mag.

Mag. Marina Vodopivec

Mag. Maja Zalokar

# I. Sekcija Zeleneča andragoška

## spoznanja

### OPREDELITEV UČINKOVITOSTI IZOBRAŽEVANJA ODRASLIH

#### Defining the Effectiveness of Adult Education

Mag. Maja Zalokar  
B&B Visoka šola za trajnostni razvoj

#### **Povzetek**

*Kakovost v izobraževalni dejavnosti je težko natančno opredeliti, pojmujejo jo na najrazličnejše, lahko tudi nasprotujoče si načine. Prav tako lahko razmišljamo o opredeljevanju in merjenju učinkov izobraževanja. Tudi učinke je težko meriti, gre za zapletene, kompleksne pojave, katerih vzrok težko določimo, saj nanje lahko vplivajo različni dejavniki in okoliščine. V današnjem okolju in času je znatnega pomena, da vključene v izobraževalni sistem lahko informiramo, kakšni bodo učinki po zaključenem izobraževanju. V izobraževalni organizaciji B&B, ki izobražuje odrasle, smo raziskali dejavnosti, ki so ključne za nadgradnjo udeležencevih kompetenc. Na podlagi rezultatov smo pripravili instrumentarij za merjenje učinkov po zaključenem izobraževanju: kako ti vplivajo na delovno okolje in življenje udeleženca. Pozorni smo bili tudi na negativne ali nepredvidene učinke. Omejili smo se na področja in podpodročja, ki opredeljujejo rezultate izobraževanja: udeležbo odraslih v izobraževanju, splošno uspešnost odraslih v izobraževanju, dosežke v znanju in osebnem razvoju ter zadovoljstvo udeležencev in partnerjev. Po temeljito opravljeni analizi stanja v izobraževalni organizaciji smo pripravili izhodišča za raziskavo opredelitve učinkov izobraževanja, usmerjeno na dosežke izobraževanja udeleženca, organizacije in okolja. Podlaga za merjenje in opredeljevanje dosežkov so standardi znanja iz katalogov znanj posameznih programov.*

*Učinke je treba spremljati in analizirati, saj so pomembna informacija o kakovosti izobraževalne organizacije za prispevek k razvoju udeleženca in podatek za delodajalca, ki udeleženca zaposluje.*

**Ključne besede:** kakovost, izobraževanje, učinki, merjenje, izobraževalna organizacija

#### **Abstract**

*It is difficult to precisely define the quality of educational activity; we can additionally consider defining and measuring the effects of education. The effects are also difficult to measure, they are complicated, a complex phenomena, it is not easy to determine the cause as these can be influenced by different factors and circumstances. In today's environment and time, it is important that we can inform those involved in the education system what the effects will be after completing education. At B&B, an adult education organization, we researched activities that are key to upgrading participants' competencies. Based on the results, we have prepared*

*a toolkit to measure the effects of post-graduation education, how they impacted their work environment and life. We also paid attention to negative or unforeseen effects. We confined ourselves to the areas and sub-areas which define the outcomes of education; adult participation in education, overall adult performance in education, achievement in knowledge and personal development, and satisfaction of participants and partners. After a thorough analysis of the situation in the educational organization, baselines were prepared for researching the definition of the effects of education, focused on the achievements of the participant's education, organization, and environment. The basis for measuring and defining achievements are the standards of knowledge from the knowledge catalogs of individual programs.*

*The effects need to be monitored and analyzed as they are important information on the quality of the educational organization; they should contribute to the development of the specific participant, as well as inform the employer who employs the participant.*

**Keywords:** *quality, education, effects, measurement, educational organization*

## **MOTIVACIJSKI VIDIKI UČNIH APLIKACIJ PRI POUKU NEMŠČINE**

### **Motivational Aspects of Learning Applications in German Lessons**

Mag. Rosvita Šengelaja  
B&B izobraževanje in usposabljanje, Višja strokovna šola

#### ***Povzetek***

*Namen članka je predstaviti posodobitev nekaterih starih didaktičnih prijemov z vključevanjem aplikacij v pouk, s čimer učitelj doseže višjo stopnjo motiviranosti študentov, kar privede v kakovostnejšo dejavnost in trajnejše znanje. Delo z aplikacijami omogoča študentom razvijanje samostojnosti, domišljije, kreativnosti, možnosti za sodelovanje in komunikacijo, s čimer se krepi njihova notranja motivacija, ki vodi k večji ustvarjalnosti in večjemu zadovoljstvu z učenjem. Vloga učitelja kot predavatelja se spremeni v vlogo načrtovalca, spodbujevalca in spremljevalca študentove aktivnosti. Pri načrtovanju dela z aplikacijami se lahko učitelj opre na konkretne predloge, navedene v tem članku, pa tudi na predstavitev nekaterih aplikacij in na namige za delo z njimi.*

***Ključne besede:*** *aplikacija, motivacija, kolo odločanja, miselni vzorci, strip*

#### ***Abstract***

*The purpose of the article is to present an update of some of the old didactic approaches by incorporating applications into the lessons. This gives the teacher a higher level of student motivation, leading to better quality activities and longer lasting knowledge. Working with applications enables students to develop autonomy, imagination, creativity, opportunities for collaboration and communication. These developments enhance their intrinsic motivation, which leads to greater creativity and greater satisfaction with learning. The role of the teacher as a lecturer is transformed into the role of the planner, facilitator and monitor of the student's activity. When designing work with applications, the teacher may rely on the specific*

*suggestions provided in this article as well as on the presentation of some applications and tips for working with them.*

**Keywords:** application, motivation, wheel decide, mind map, comics

## **KDO JE BOLJŠI?**

### **Who Does It Better?**

Helen Žerovec  
Native English Teacher

#### **Povzetek**

*Če bi rekli, da učitelji jezika prihajajo v dveh različnih skupinah, od katerih so v prvi popolnoma usposobljeni, strokovno kvalificirani učitelji, v drugi pa materni govorniki, kako bi presodili, kdo je boljši? Kaj prvi prispevajo, a drugi ne? Ali med seboj čutijo neenakost ter če se primerjajo, kdo bi se počutil kot poraženec, če bi jih dali v ring?*

*Morda moramo za odgovor na ta vprašanja upoštevati drugo pomembno polovico enačbe učenja jezika: študenta.*

*Študenti, tako kot učitelji, so različni: po velikosti in starosti, od miniaturnih vrtcev do stanovalcev upokojencev in celotnega spektra vmes. Na njihovo motivacijo za učenje jezika vplivajo različni dejavniki. Na primer, kdo plačuje pouk? Ali gre za starša, vlado, delodajalca ali pa honorar prihaja neposredno iz študentskega žepa? Kaj je želeni cilj? Ali je to, da se naučite uspravko, opravite izpit, se udeležite poslovnega srečanja s tujimi partnerji ali preprosto, da lahko med počitnicami v tujini samozavestno govorite?*

*Če so imeli učenci predhodne izkušnje z jezikovnim učenjem, lahko to močno vpliva na njihove želje glede učitelja. Nekateri so dobro vajeni disciplinirane pedagogike s pravili, ki jih je treba upoštevati, veliko vajami in domačini nalogami, ki jih je treba oceniti. Z lahkoto in navdušenjem se spet znajdejo pri takšnih nalogah in priključijo že dolgo pozabljeno znanje, ki je še vedno zakopano v njihovem spominu. Na žalost imajo nekateri drugačno izkušnjo. Pri teh lahko že samo misel, da bi morali oblikovati stavek, povrne občutke sramu, neustreznosti in neuspeha.*

*Nazadnje moramo upoštevati pričakovanja študentov. Kaj pričakujejo od jezikovnega tečaja, od učitelja in kaj pričakujejo od sebe? Kateri od učiteljev bo najbolje izpolnil ta pričakovanja? Vabljeni k razpravi.*

**Ključne besede:** učenje jezika, materni govorec, pričakovanja, pretekle izkušnje

#### **Abstract**

*If we were to say that language teachers come in two different packages, one being the fully qualified, professionally-trained teacher and the other being a native-born speaker, how would we judge which one is better? What does either one bring to the table which the other does not? Do they each sense a level of inequality when comparing themselves and if they were to be put into a fighting ring, who would feel like the underdog?*

*Perhaps in order to answer these questions we must take into consideration the other important half of the language learning equation, the student.*

*Students, like teachers, come in all shapes, sizes and ages, from kindergarden miniatures to retirement home residents and a whole spectrum in between. A variety of factors can influence their motivation to learn a language. For example, who is paying for the lessons? Is it a parent, the government, an employer, or is the fee coming straight from the student's own pocket? What is the desired goal? Is it to learn a nursery rhyme, pass a school exam, participate in a business meeting with foreign partners, or simply to be able to speak with confidence while holidaying abroad?*

*If the students have had previous experience of language learning, this can have a huge influence on their preference of teacher. Some are well-used to a disciplined pedagogy with rules to follow, plenty of exercises and homework to be graded. They can easily and enthusiastically fall back into such tasks, summoning up that long forgotten knowledge still buried in their memories. Sadly, others have had a different experience, one where just the thought of having to form a sentence can bring feelings of shame, inadequacy and failure flooding back.*

*Finally, we must take into consideration the students' own expectations. What do they expect to gain from the language course, from the teacher, and what do they expect to give of themselves? Which of the two types of teacher will best meet these expectations? Let us discuss.*

**Key words:** *language learning, native speaker, expectations, past experience*

## **SPREMLJANJE KAKOVOSTI PODPORE, KI JO UČITELJI NUDIJO ODRASLIM UDELEŽENCEM IZOBRAŽEVANJA**

### **Monitoring the Quality of Support that Teachers Provide to Adult Learners**

Mag. Maja Zalokar  
B&B Visoka šola za trajnostni razvoj

#### ***Povzetek***

*Dobra in kakovostna izobraževalna organizacija, ki izobražuje odrasle udeležence, mora biti nekaj več kot le posredovalnica znanja. Poleg organizacije in izvedbe izobraževanja mora nuditi dobro podporo posamezniku, da se lažje ponovno vključi v izobraževanje, uspešno premaguje možne ovire pri učenju, razume in zna uporabljati različne metode izobraževanja. Tako kot udeleženci z neenakimi predznanji tudi učitelji odraslih udeležencev prihajajo z različnih strokovnih področij in z drugačnimi pedagoškimi izkušnjami.*

*V izobraževalni organizaciji B&B smo v prvi fazi raziskave analizirali vrste podpore, ki jo naši učitelji nudijo odraslim udeležencem izobraževanja. Na podlagi rezultatov analize smo v drugi fazi določili tri standarde kakovosti: organizacija za izobraževanje odraslih redno spremlja kakovost podpore, ki jo učitelji nudijo udeležencem izobraževanja; organizacija za izobraževanje odraslih redno spremlja zadovoljstvo udeležencev z različnimi vidiki dela učiteljev; organizacija za izobraževanje odraslih redno spremlja zadovoljstvo udeležencev z različnimi vidiki dela učiteljev. V tretji fazi smo pripravili merila za spremljanje kakovosti podpore, ki jo učitelji nudijo udeležencem pri izobraževanju odraslih, in dopolnili vprašalnike za udeležence – zadovoljstvo udeležencev z učitelji. Merila smo vključili v učiteljev dnevnik. Pripravljeni vprašalnik je vodilo za spremljanje kakovosti učiteljevega dela – osredotočeno na področja motivacije in usposabljanja za učenje, izvedbe izobraževanja, različne in dodatne oblike podpore, napotitve na posebno pomoč. Učitelj lahko sproti sam preverja kakovost*

*svojega dela. Organizacija tako lahko ugotavlja potrebe po nujenju različnih učnih pomoči, analizira, ali so obstoječe ustrezne, in organizira dejavnosti ter metode izobraževanja, ki prinašajo še boljše rezultate pri udeležencih, kot so kakovostno znanje, motivacija za učenje, pridobljene prave veščine.*

**Ključne besede:** *kakovost, izobraževanje, izobraževalna organizacija, podpora, odrasli udeleženci*

### **Abstract**

*A good and quality educational organization which educates adult participants should be more than just a facilitator of knowledge. In addition to organizing and delivering education, it must provide good support to the individual in order to be more easily reintegrated into education, successfully overcome potential barriers to learning, understand and be able to use different methods of education. Like participants with diverse backgrounds, adult participants' teachers come from different professional fields and have different teaching experiences.*

*At B&B, an adult education organization, in the first phase of the survey, we analyze the types of support our teachers provide to adult learners. Based on the results of the analysis, in the second phase three quality standards are set: the adult education organization regularly monitors the quality of support provided by teachers to the learners, the adult education organization regularly monitors the participants' satisfaction with various aspects of teacher work, the adult education organization regularly monitors the satisfaction of participants with different aspects of teacher work. In the third phase, a criteria for monitoring the quality of support provided by teachers to adult learning participants was developed and supplemented by questionnaires for participants - participants' satisfaction with teachers. The criteria were included in the teacher's diary. The prepared questionnaire is a guide for monitoring the quality of the teacher's work - focused on the areas of motivation and training for learning, the implementation of education, various and additional forms of support, and referrals for special assistance. The teacher can check the quality of his work on his own. The organization can thus identify needs for the provision of different learning aids, analyze whether existing ones are appropriate, and organize activities and training methods which bring even better results for the participants, such as quality knowledge, motivation for learning, acquisition of real skills.*

**Keywords:** *quality, education, educational organization, support, adult participants*



# *II. Sekcija Varstvo okolja skozi oči organizacij 1*

## **ECO KARST – ZAVAROVANA OBMOČJA IN NARAVI-PRIJAZNA PODJETJA**

### **ECO KARST – Protected Areas and Pro-Biodiversity Businesses**

Mag. Sašo Gorjanc  
Zavod za gozdove Slovenije (Slovenia Forest Service)

#### ***Povzetek***

*Medtem ko svetovna izguba biodiverzitete ostaja ena glavnih okoljskih izzivov, s katerimi se sooča človeštvo, nujno potrebujemo nove načine za sobivanje naravovarstva in ljudi. Zavarovana območja so ena od najučinkovitejših orodij za varstvo biodiverzitete, ki jih imamo na razpolago, ampak hkrati tudi na različne načine omejujejo življenje ljudi, ki živijo znotraj in v njihovi okolici. Te omejitve imajo lahko resne posledice za lokalno gospodarstvo in znižajo življenjski standard na lokalnem nivoju. Posledice so lahko velikokrat intenzivni in dolgotrajni konflikti med lokalnim prebivalstvom in naravovarstveniki, kar lahko kot stranski produkt povzroči negativne odnose tudi do lokalne narave.*

*Ekosistemske storitve so koncept, ki je bil razvit za boljšo integracijo okoljskega gibanja in gospodarstva. Zaradi svoje široke uporabnosti se je globoko vkoreninil v različne politike na vseh nivojih, od lokalnega do mednarodnega. Vendar je še vedno tudi na tialu, ker je praktično nemogoče natančno oceniti pravo vrednost narave, ki pa hkrati še vedno tudi ni upoštevana v dejanskem ekonomskem načrtovanju.*

*Preučili smo novo uporabo kartiranja ekosistemskih storitev v kraških zavarovanih območjih Podonavja. Kraška območja so izredno ranljiva, predvsem na onesnaženje, zaradi pomanjkanja vodnih virov in kompleksnih podzemnih sistemov poleg spefificnih površinskih geomorfoloških pojavov. Skartirali smo ekosistemske storitve kraških zavarovanih območij in jih potem skozi participativne delavnice z lokalnimi deležniki uporabili za definicijo možnosti za investicije v biodiverzitetu in nadaljni razvoj naravi prijaznih podjetij. To so podjetja, ki ustvarjajo dobičke, hkrati pa aktivno ščitijo biodiverzitetu s svojimi aktivnostmi oziroma ji ne škodujejo.*

*Ugotovili smo, da so naravi prijazna podjetja odlična priložnost za zmanjšanje konflikta med lokalnim prebivalstvom in družbami na eni in naravovarstvom na drugi. Ta pristop je posebno uporaben v razvijajočih se delih sveta, saj omogača integrirano varovanje narave in hkratno izboljšanje življenjskega standarda. Vključitev teh možnosti v upravljanje z zavarovanimi območji tudi nakazuje svetlo prihodnost za boljšo učinkovitost zavarovanih območij in bolj trajnostno naravnano prihodnost v širšem smislu.*



**Ključne besede:** zavarovana območja, ekosistemske storitve, naravi prijazna podjetja, konflikt, biodiverziteteta

### **Abstract**

*While the global loss of biodiversity remains one of the main environmental challenges facing humanity, new ways in which nature conservation and people can coexist need to be developed. Protected areas are one of the most effective biodiversity conservation tools at our disposal, yet at the same time they also incur a wide variety of restrictions for peoples living within and around them. The restrictions can have severe consequences for local economy and lower the standard of local livelihoods. The consequence is often intense and persistent conflict between local peoples and conservationists, which generates considerable resentment towards nature, as a side-product.*

*Ecosystem services are a concept that has been developed for closer integration of environmental movement and economy. This concept has been deeply integrated into policies on different levels, from local to international, with very wide applicability. However, it is often criticised as it is still impossible to monetarily evaluate the true value of nature, while on the other hand it is also not often employed in actual economic planning.*

*We examined a novel use of the ecosystem service mapping in Karst protected areas of the Danube river basin. Karst areas are incredibly vulnerable, especially to pollution, due to the scarcity of water resources and complex underground systems in addition to particular surface geomorphologies. The ecosystem services of Karst protected areas were mapped and then used through a series of participatory workshops with local stakeholders to define opportunities for Biodiversity Investment Opportunities (BIO) and subsequent development of Pro-Biodiversity Businesses. Those are enterprises that generate profit while not harming or actively preserving biodiversity with their activities.*

*We found that Pro-Biodiversity Businesses are a great opportunity for mitigating the conflict between local populations and societies, on one side, and nature conservation on the other. This approach is particularly useful in the developing parts of the world, as it allows for integrated nature protection and improvement of living standard, at the same time. The integration of these opportunities also into the protected area management hints at a brighter future for the effectiveness of protected areas and more sustainable future in a wider context.*

**Keywords:** Protected areas, ecosystem services, pro-biodiversity businesses, conflict, biodiversity

# MEDCIS – NAPROTI SKUPNEMU IN KOORDINIRANEMU VAROVANJU EVROPSKIH MORIJ

## MEDCIS – Towards a Common and Coordinated Protection of European Seas

Mag. Sašo Gorjanc  
Zavod za gozdove Slovenije (Slovenia Forest Service)

### **Povzetek**

*Intenzivna raba svetovnih morij je s seboj prinesla široko in dolgoročno degradacijo morskega okolja. Evropska morja so še posebno prizadeta zaradi zgodovinske in široke rabe pomorskih narodov. Evropska unija poskuša zmanjšati negativne učinke človeške rabe in zagotoviti, da evropska morja ostanejo v dobrem okoljskem stanju ali ga dosežejo skozi implementacijo Okvirne direktive o morskimi strategiji (2008/56/EC). Ta holistična in ambiciozna direktiva naslavlja teme od varovanja biodiverzitete do eutrofikacije in kemičnega onesnaženja kot tudi invazivne tujerodne vrste, morske odpadke in podvodni hrup. Vendar pa največji izziv postaja zagotavljanje koordinacije med državami članicami EU, ker je ekološka realnost, da morski ekosistemi ne poznajo meja.*

*Ampak kako zagotoviti, da bodo programi ukrepov, torej operacijski del direktive, učinkoviti v doseganju dobrega okoljskega stanja in usklajeni med državami članicami? V projektu MEDCIS smo preučili vse ukrepe, ki se nanašajo na onesnaževanje morja (eutrofikacija in onesnaževala) ter ukrepe, ki se vežejo na invazivne tujerodne vrste in morske odpadke v Sredozemlju. Analizirali smo njihovo usklajenost na podregionalnih in regionalnih nivojih in identificirali ukrepe, ki so potrebni za zapolnitev trenutnih vrzeli. Rezultati kažejo, da je usklajenost med državami z izjemo Jadranskega morja izjemno nizka in izjemno nizka za ukrepe, ki se vežejo na morske odpadke. To je bilo pričakovano, saj so morski odpadki relativno nova tema na svetovnem nivoju. Zanimiveje je, da je usklajenost nizka tudi pri onesnaževalih, ki jih regulira cela množica že obstoječih politik in regulacij.*

*Na splošno je ambicioznost ukrepov prenizka in koordinacija med državami članicami skorajda ne obstaja. Usklajenost pristopov se mora izboljšati, ampak vsaj na nekaterih področjih bi bilo mogoče začeti, kjer že obstajajo podobni ukrepi, in bi bilo usklajevanje enostavno, potrebna bi bila le boljša koordinacija pri njihovem izvajanju. Če to bi nas lahko pripeljalo bližje doseganju dobrega okoljskega stanja v evropskih morjih.*

**Ključne besede:** ODMS, Sredozemlje, onesnaženje, okoljevarstvo, EU

### **Abstract**

*The intensive use of the world's oceans has brought about the widespread and pervasive degradation of the marine environments. The European seas are particularly affected, due to historic and widespread uses of the maritime nations. The European Union aims to reduce the deleterious impacts and ensure that the European seas remain in good environmental status (GES) or achieve it, through implementation of Marine Strategy Framework Directive (MSFD, 2008/56/EC). This holistic and ambitious policy addresses topics from biodiversity preservation, to eutrophication and chemical pollution, as well as invasive alien species, marine litter, and underwater noise. However, the main challenge lies in ensuring a working coordination between the EU Member States, as the ecological reality of the marine environments knows no borders.*

*However, how to ensure that MSFD's Programmes of Measures, its operational component, are effective in achieving GES and coordinated among the Member States? Within MEDCIS project, we analysed all the measures in the Mediterranean region addressed at pollution (eutrophication and contaminants), as well as more novel themes of invasive alien species and marine litter. We analysed their coherence on*

regional and subregional levels and identified measures to fill the existing gaps. The results indicate that the coherence is relatively low, apart from the Adriatic subregion and significantly less coordinated for marine litter, which was expected given that marine litter is an emerging issue, that has only been recently recognised as a major global problem. More interestingly, the coherence was also very low for the contaminants, which were already regulated by a wealth of other policies and regulations. Overall, the ambitiousness of the measures was found to be lacking and coordination between Member States more or less non-existent. Coherence of approaches should still be improved, but at least in a few of the areas, it would be possible to already capitalise on the identified coherent measures and implement them in a more coordinated way, which would increase the overall effectiveness of measures and bring us closer to achieving GES in European Seas.

**Keywords:** MSFD, Mediterranean, pollution, environmental protection, EU

## IZOBRAŽEVANJE PREKO SPLETA: PRIHODNOST »ZELENEGA« UČENJA JEZIKOV

### Online Education: The Future of »Green« Language Learning

Michael Reidy, CELTA; Nicola Patrone  
Patrone & Reidy Languages

#### *Povzetek*

*Prispevek raziskuje širjenje poučevanja angleškega jezika preko spleta na mednarodni ravni. Raziskuje tudi, kako bi lahko to uporabile jezikovne šole, da bi preko spletnega izobraževanja zmanjšale emisije ogljikovega dioksida. To bi dosegli s spodbujanjem določenih učencev, da se odločijo za spletni pouk kot nadomestilo ali dopolnitev pouka v živo.*

*Dandanes veliko potrošnikov razmišlja o globalnem segrevanju, podnebnih spremembah in zelenih alternativah. Zato preučujemo, ali bi lahko uporabili okolju prijaznejši model poučevanja jezikov. S tem bi optimizirali udobje učenca in zmanjšali emisije in stroške za podjetja. Navedeni podatki so bili zbrani iz intervjujev, časopisov, Statističnega urada Republike Slovenije ter spletne strani Britanskega odbora (British Council).*

*V predstavitvi bodo uporabljeni kvalitativni in kvantitativni podatki o trenutnih navadah študentov v Sloveniji, ki se vozijo na jezikovne tečaje. Govorijo tudi o emisijah ogljikovega dioksida, ki nastanejo v povprečni učilnici med učenjem, in kako jih je mogoče zmanjšati. Nadalje bomo na kvalitativni način raziskali prednosti in pomanjkljivosti spletnega učenja (izhajajoč iz izkušenj avtorjev) ter tudi, za katere študente bi se ta model lahko izkazal kot koristen. Na koncu bomo spregovorili o tem, kako bi pouk preko spleta lahko uporabljali kot glavno in dopolnilno izobraževalno orodje za učenje jezikov.*

**Ključne besede:** angleščina, lekcije, emisije, zeleno, Ljubljana

#### *Abstract*

*This presentation examines the growth of the online education sphere in English language instruction internationally, and how this could be utilised by language schools in terms of*

*reducing carbon emissions by encouraging certain students to opt for online classes as opposed to, or to supplement, face-to-face instruction.*

*In the current climate, where global warming, climate change, and green alternatives are paramount in the minds of many consumers, we examine how a greener model can be applied in terms of language learning in order to maximise convenience for the learner, and decrease emissions and costs for businesses. Data have been collected from interviews, newspapers, Statistični Urad Republike Slovenije, and the British Council Website.*

*The presentation will utilise both qualitative and quantitative data, examining current habits among students in Slovenia travelling to language classes, the carbon emissions an average classroom emits, and how a reduction could be achieved.*

*Furthermore, the advantages and drawbacks of online learning will be examined in a qualitative manner (drawing on the experience of the authors), as well as which types of student this model could prove advantageous for, and, finally, how online classes could be used as both a main and adjunctive educational tool for language learners.*

**Keywords:** *English, classes, emissions, green, Ljubljana*

## OKOLJSKA KOMUNIKACIJA

### Environmental Communication

Tatjana Čeh Naglič  
B&B Visoka šola za trajnostni razvoj

#### **Povzetek**

*V prispevku je predstavljena opredelitev okoljske komunikacije in njenih področij. Prikazani so trije modeli okoljske komunikacije: klasični (primanjkljaj) model, uokvirjanje in sodobni (dialoški) modeli. Po mnenju različnih avtorjev je okoljska komunikacija krizna in disciplina, ki neguje, kar pomeni, da obstajajo etične posledice njene usmeritve. V prispevku so predstavljeni elementi dobrega načrta za učinkovito okoljsko komunikacijo po mnenju okoljskih komunikatorjev in okoljskih psihologov. Prvi izpostavljajo strategije, kot so lokalizacija vprašanja, vzpostavljanje odnosov, ciljno naravnana komunikacija in raba jezika. Drugi med njegove temeljne elemente umeščajo ciljno sporočanje, akcijsko znanje, poslušanje v primerjavi s pripovedovanjem in živo sporočanje. Za vpogled v okoljsko komunikacijo v Sloveniji prispevek vključuje primere iz revij, časopisov, oglasov, dogodkov in drugih, in tako prikaže širino uporabljenih elementov ter stanje primerja s priporočenimi praksami. Glede na ugotovitve so podani predlogi, ki bi jih organizacije lahko uporabile za izboljšanje svoje okoljske komunikacije.*

**Ključne besede:** *okoljska komunikacija, ciljno sporočanje, akcijsko znanje, vzpostavljanje odnosov, okoljski psihologi.*

#### **Abstract**

*Paper introduces the definition of environmental communication and its areas. Secondly, it introduces three models of environmental communication: the classical (deficit) model, the framing model, and contemporary (dialogic) models. According to different authors,*

*environmental communication is a crisis and care discipline which means there are ethical implications of its orientation. Paper presents elements of a good master plan for efficient environmental communication according to environmental communicators and environmental psychologists. The first expose strategies as localizing the issue, building relationships, target-based communication, and language. Second prioritize targeted messaging, action knowledge, listening vs. telling and vivid messaging. To give an insight into environmental communication in Slovenia paper uses examples from magazines, newspapers, advertisements, events, and others to underpin the width of used elements according to best practices. According to findings paper gives direction that organizations could use to improve its environmental communication.*

**Keywords:** *environmental communication, targeted messaging, action knowledge, building relationships, environmental psychologists.*

## **IZZIVI, S KATERIMI SE SPOPADA NEMČIJA, KO POSKUŠA DOSEČI SVOJE PODNEBNE CILJE DO LETA 2030 IN OBNOVITI SVOJE ZELENO ZNANJE**

### **The Challenges That Germany Face as it Tries to Achieve its 2030 Climate Goals and Restore Its Green Credentials**

Elijah Sriroshan Sritharan, MSc  
PhD candidate at University of Exeter, England

#### ***Povzetek***

*Izzivi, s katerimi se sooča Nemčija, ko poskuša doseči svoje podnebne cilje do leta 2030 in tako obnoviti svojo zeleno politiko.*

*Zemlja se je od predindustrijskih časov za posledicami toplogrednih plinov segrela za približno 1 °C. Glavni viri emisij toplogrednih plinov so fosilna goriva. Svet se že sooča s posledicami v obliki naraščajoče morske gladine, rekordnih temperatur, intenzivnih orkanov in divjih požarov. Stopnjujejo se pritiski po ukrepih na področju podnebnih sprememb. Nemčija je napovedala, da bo do leta 2038 zaprla vse svoje termoelektrarne na premog in tako izpolnila mednarodne podnebne zaveze. Odločitev je sledila predhodni zavezi energetske politike, da se do leta 2022 ustavijo vse nemške jedrske elektrarne. Po letih enakomerne porabe je Nemčija v prvi polovici leta 2019 zmanjšala porabo premoga za proizvodnjo električne energije, medtem ko obnovljivi viri predstavljajo že 47,3 % proizvedene električne energije v državi. V zadnjih dveh desetletjih v Nemčiji raste delež pridobljene elektrike iz obnovljivih virov energije, zahvaljujoč "Energiewende". Dobičkonosnost proizvodnje električne energije se je iz premoga prevesila na zemeljski plin, predvsem zaradi povišanja stroškov trgovanja z emisijskimi kuponci (izpustov pravic za ogljikov dioksid – CO<sub>2</sub>). Medtem ko si vlada prizadeva spodbujati obnovljive vire energije, naftna in plinska industrija vztrajata, da je zemeljski plin prehodno gorivo kot odgovor na podnebne spremembe in da je glavna alternativa ob zapiranju termoelektrarn na premog in jedrskih elektrarn. Vendar so to trditve znanstveniki in Mednarodna agencija za energijo zavrnil. Poleg tega so izravnalni stroški „obnovljive“ energije (LCOE) cenejši od*



*premoga in jedrske energije ter postajajo tudi cenovno konkurenčni zemeljskemu plinu. Obnovljivi viri energije v kombinaciji z baterijami vse bolj postajajo najcenejši vir energije. Danes je ključnega pomena, da so energetske naložbe usmerjene v prihodnost in resnično služijo najboljšim interesom, investitorjem, gospodarstvu in planetu za prihodnje generacije. Čista, fleksibilna in dinamična mreža, ki jo poganjajo obnovljiva energija in sodobne energetske tehnologije, je pot v prihodnost.*

**Ključne besede:** *podnebne spremembe, fosilna goriva (premog in zemeljski plin), obnovljivi viri energije, energiewende, zmanjšanje stroškov energije*

### **Abstract**

*The planet has already warmed by about 1°C since pre-industrial times as a result of the human-caused greenhouse gas (GHG) emissions. Fossil fuels are seen as major sources of GHG emissions. The world is already experiencing the consequences in the form of rising sea levels, record-breaking temperatures, intense hurricanes and wildfires. There is growing demands for urgent action on climate change. Germany announced that it would shut down all of its coal power plants by 2038 to meet its international climate commitments. The decision follows an earlier energy policy move to shut down all of Germany's nuclear power plants by 2022. After years of steady output, Germany generated significantly less electricity from coal in the first half of 2019: renewables accounted for 47.3% of the country's electricity. Germany's renewables has been rising steadily over the last two decades thanks to "Energiewende". A plunge in natural gas prices combined with a rise in the cost of carbon dioxide (CO<sub>2</sub>) allowances in the EU Emissions Trading System shifted the profitability of generating electricity away from burning coal. While the government is seeking to spur renewables, oil and gas industry argue that natural gas is a transition fuel in the response to the climate change and that it is the main alternative for closing coal and nuclear power plants. However, that argument has been rejected by scientists and the International Energy Agency. Furthermore, the levelized cost of "renewable" energy (LCOE) is now cheaper than coal, nuclear, and is also becoming cost competitive with natural gas. With renewables and battery storage increasingly becoming the cheapest source of power, it is vital that the energy investments being made today are forward-thinking and truly serve the best interest of ratepayers, the economy and the planet for generations to come. A clean, flexible, and dynamic grid – powered by renewable energy and modern energy technologies – is the way of the future.*

**Keywords:** *Climate change, Fossil fuels (coal & natural gas), Renewable energy, Energiewende, Levelised Cost of Energy*

# III. *Sekcija Ekonomija za trajnostni razvoj*

## EKONOMIJA ZA TRAJNOSTNI RAZVOJ

### Economy For Sustainable Development

Nada Medved

Srednja frizerska šola Ljubljana (The Ljubljana Secondary School for Hairstyling)

#### *Povzetek*

*Trajnostni razvoj povezuje socialne, gospodarske in kulturne politike za zagotavljanje zelo kakovostnega družbenega razvoja. Prvotno je bil opredeljen kot razvojni model z dvema temeljnima razsežnostma: prva poudarja zadovoljevanje človekovih potreb, predvsem osnovnih potreb najrevnejših delov svetovne populacije, druga pa omejeno sposobnost narave, da zadovolji sedanje in prihodnje potrebe kot posledice tehnološke razvitosti in sodobne družbene organiziranosti. Primer trajnostnega razvoja je tudi izvajanje denacionalizacij in melioracij kmetijskih zemljišč, ki so se izvajala na Dravskem polju. V raziskavi smo anketirali gospodinjstva na Dravskem polju, da bi ugotovili, v kolikšni meri in za katere namene uporabljajo obdelavo kmetijskih zemljišč. Anketirali smo 70 gospodinjstev z od 3 do 50 hektarji zemlje. Ugotovljeno je bilo, da je naravni dejavnik – zemlja pristala v lasti velikih kmetijskih gospodarstev, ki postajajo zasvojena z doseganjem čim večjega dobička, ne da bi se ozirala na rodovitno zemljo. 60 % majhnih kmetij je bilo prisiljeno opustiti obdelovanje lastne zemlje zaradi nedobičkonosnosti oziroma neekonomičnosti. Evropski in svetovni trg namreč v ospredje postavljata merila, kot so velike količine proizvodnje z minimalnimi stroški, saj se le tako dosega dobiček. Od anketiranih gospodinjstev jih je 40 % zaradi opuščanja obdelovanja lastne zemlje ostalo brez dela. Anketiranci pa so poudarili tudi nedavne velike naravne katastrofe, kot so plazovi, poplave, toča. Ob ugotovljenem se postavlja vprašanje, ali so bile melioracije res tako nujne, da so meliorirali tudi vsa drevesa, ki so jih zasadili naši predniki. Ti so že davno v preteklosti vedeli, da se le tako zavaruje odnašanje zemlje zaradi vetra, poleg tega pa nudijo zavetje tudi pticam in živalim. Poudarjene težave, poleg gospodarstev, ki si gradijo visoke ograje, da zavarujejo nepremičnine pred vremenskimi vplivi, neposredno ogrožajo tudi zmanjšanje in zagotovitev samooskrbe s hrano v Sloveniji.*

***Ključne besede:*** trajnostni razvoj, melioracije, kmetijska zemljišča, gospodarska rast, onesnaževanje okolja

## **Abstract**

*Sustainable development integrates social, economy and cultural policies for ensuring a high-quality social development. Initially, sustainable development had been defined as a developmental model encompassing two basic dimensions; the first focusing on meeting the needs of the individual, in particular basic needs of the poorest segments of the global population, and the other focusing on the limited capacity of nature to meet the current and future needs arising as consequences of technological development and modern social organization. Examples of sustainable development are also the denationalization and land reclamation activities aimed at agricultural land, being carried out throughout the Drava Plain region. For my research, I carried out a survey of among the households in the Drava Plain region to determine to what extent and for which purposes they are working the land. The survey included 70 households, owning from 3 to 50 hectares of land. The survey showed that the natural factor, land, landed in the hands of large agricultural households, which are becoming addicted to achieving more and more profit with no regard for the fertile soil. 60% of small farms were forced to quit working their own land due to non-profitability – economic inefficiency. European and world market pushes for criteria, such as “high volume production with minimal costs”, as this is the only way to achieve profit. Among the households included in the survey, 40 % became unemployed due to cessation of farming their own land. Those included in the survey, also stressed the fact that recent years brought great natural catastrophes, such as landslides, floods, hail. Regarding this, I am beginning to wonder whether land reclamation activities really had been so urgent, to also include all trees planted by our ancestors, as it was widely known already in the distant past that trees protect the land against wind, while they also offer shelter to birds and other animals. Problems stressed here, together with farming households erecting tall fences to protect their real estates against weather conditions, are directly threatening the self-sufficiency in food in Slovenia.*

**Keywords:** *sustainable development, land reclamation, agricultural area, economic growth, environmental contamination*

## **POSKUS POVEZAVE TRAJNOSTNEGA RAZVOJA IN OBVLADOVANJE PREMOŽENJA (VZDRŽEVANJA)**

### **An Attempt to Link Sustainable Development and Asset Management (Maintenance)**

Mag. Viktor Jemec, DVS (Društvo vzdrževalcev Slovenije), dr. Damjan Maletič, FOV  
Maribor

#### **Povzetek**

**Ozadje in namen:** *Industrija 4.0 zahteva globok poseg v sedanjo stopnjo industrializacije v hitro spreminjajočem se poslovnem okolju. Podjetja se lotevajo sprememb sistematično.*



*Poskušali bomo prikazati povezavo z novejšimi trendi, predvsem z obvladovanjem premoženja in načinom vzdrževanja, prikazanem v tem sistemu.*

**Oblikovanje/ Metodologija/ Pristop:** *Predstavljena bo analiza na osnovi pregleda literature raziskovalcev in ostalih deležnikov v teh spremembah.*

**Rezultati:** *Na osnovi predlaganega okvira analize bomo dobili grobo sliko dogajanja na navedenem področju v svetu in Sloveniji.*

**Zaključek:** *Prikazana spoznanja kažejo, da se bo treba še intenzivneje ukvarjati s trendi obvladovanja premoženja in mesta vzdrževanja v njem.*

**Ključne besede:** *industrija 4.0, obvladovanje premoženja, fizična sredstva, vzdrževanje*

### **Abstract**

**Background and Purpose:** *Industry 4.0 requires a deep intervention in the current stage of industrialization in a rapidly changing business environment. Companies are systematically addressing change. We will try to show a link to recent trends, especially property management and how maintenance is displayed in this system.*

**Design / Methodology / Approach:** *An analysis will be presented based on a literature review of the researchers and other participants in these changes.*

**Results:** *Based on the proposed framework of analysis, we will get a rough picture of the developments in the mentioned field in the world and Slovenia.*

**Conclusion:** *The findings presented here indicate that it will be necessary to work more intensively on trends in asset management and the place of maintenance in it.*

**Keywords:** *Industry 4.0, asset management, physical assets, maintenance*

## **SISTEM OHRANITVENEGA RAZVOJA**

### **Conservation Development System**

Mag. Branko Lotrič  
B&B Visoka šola za trajnostni razvoj

#### **Povzetek**

*Ohranitvenega razvoja ne razumemo kot pojem »status quo«. Pomeni ohranitev naravnih danosti v največji možni meri, hkrati pa ne zanika napredka in sprememb v razvoju na način, da je oškodovanje planeta najmanjše možno.*

*Med temeljnimi sestavinami trajnosti, okoljskim, socialnim in gospodarskim vidikom je prisoten konflikt medsebojne soodvisnosti. Njihova uravnoteženost pa je pogoj za trajnostni razvoj.*

*Na onesnaževanje in uničevanje planeta poleg naravnih sprememb vpliva človek. Z industrializacijo, energetiko, industrijskim kmetovanjem, sproščeno mobilnostjo in drugimi sodobnimi tehnologijami se negativni učinki na okolje nezadržno krepijo. Toda socialni vidik človeštva in njegove številčnosti je pogojen ravno z razvojem gospodarskih panog. Ujeti smo v napredek človeka, ki je preko gospodarstva odvisen od izkoriščanja okolja.*

*Trajnostna skrb za okolje od človeka terja, da skrbi za čim bolj uravnovešeno delovanje med posameznimi vidiki trajnosti. Za to bi bilo treba izdelati mnogodimenzionalni,*

*interdisciplinarni in multidisciplinarni model trajnostnega upravljanja, ki bi zajel vse vplive na okolje, človeka in gospodarstvo.*

*Posamezniki oziroma človeštvo na splošno moramo prepoznati čim več priložnosti skrbeti za trajnostni razvoj, saj je to naša dolžnost. Rešitev je v nadaljnjem socialnem razvoju, ozaveščanju in izobraževanju o pomenu okolja, v katerem živimo, in v dejanjih za trajnostni razvoj.*

**Ključne besede:** trajnostni razvoj, model trajnostnega upravljanja, okolje, ohranitveni razvoj, napredek

### **Abstract**

*Conservation development is not understood as the idea of a status quo. It means safeguarding natural resources to the fullest extent possible, while at the same time, allowing progress and change in development in such a way as to minimize damage to the planet.*

*There is a conflict of interdependence between the fundamental components of sustainability, the environmental, social and economic aspects. Their balance is a pre-requisite for sustainable development.*

*In addition to natural changes, human pollution is also affected by the pollution and destruction of the planet. Through industrialization, energy, industrial farming, relaxed mobility, and other modern technologies, the negative effects on the environment are being re-inforced. However, the social aspect of humanity and its abundance is conditioned precisely by the development of industries. We are trapped in the progress of man, who through the economy, depends on the exploitation of the environment.*

*Sustainable care for the environment requires human beings to work in as balanced a way as possible between the various aspects of sustainability. To this end, a multi-dimensional, interdisciplinary and multi-disciplinary model of sustainable management should be developed, covering all environmental, human and economic impacts.*

*Individuals, or humanity in general, must recognize as many opportunities as possible to pursue sustainable development, as it is our duty. The solution lies in further social development, raising awareness and education about the importance of the environment we live in, and actions for sustainable development.*

**Keywords:** sustainable development, sustainable management model, environment, preservation, progress

# KRITIČNE VARNOSTNE GROŽNJE SPLETNIM STRANEM IN ZAŠČITA PRED NJIMI

## Critical security threats to websites and protection against them

Mag. Roman Rehberger  
Šolski center Kranj, Višja strokovna šola

### *Povzetek*

*Spletne strani so dostopne vsakomur, tudi napadalcem, ki vseskozi razvijajo nove načine vdorov vanje in nepooblaščenih dostopov do pomembnih podatkov. Da bi se izognili posledicam – nepredstavljenim izgubam informacij, prihodkov ali ugleda, je priporočljivo preizkušati varnost spletnih strani in testirati programsko opremo. Cilj varnostnega testiranja je prepoznati grožnje v sistemu in izmeriti njegove morebitne ranljivosti, tako da sistem ne preneha delovati in da pomembni podatki niso ogroženi. Namen prispevka je opozoriti na nekatere kritične varnostne grožnje spletnim stranem ter prikazati možne načine zaščite pred njimi. Primer so programi za testiranje, ki pomagajo razvijalcem pri preprečevanju varnostne ogroženosti že v fazi kreiranja kode spletne strani.*

***Ključne besede:*** napadi na spletne strani, varnostno testiranje, SQL Injection, Cross-site Scripting, Cross Site Request Forgery, OWASP - Zed Attack Proxy

### *Abstract*

*Websites are accessible to everybody, including attackers, who always develop new ways of breaking into them and unauthorized accessing to important data. To avoid harmful consequences, such as unimaginable loss of information, income or reputation, it is advisable to test website security and software. The aim of security testing is to detect security threats to the system and determine its potential vulnerability, so it does not stop operating and so there is no threat to important data. This paper aims at warning of some critical security threats to websites and showing some possible ways of protecting against them, such as testing tools, which help developers to avoid security endangerment of a website in the very process of its creation.*

***Key words:*** attacks on websites, security testing, SQL Injection, Cross-site Scripting, Cross Site Request Forgery, OWASP - Zed Attack Proxy

# IV. Sekcija Zeleneča andragoška

## spoznanja 2

### INTERNACIONALIZACIJA IZOBRAŽEVALNEGA CENTRA B&B IN UČINKI MOBILNOSTI

#### Internationalization of B&B Education Center and the Effects of Mobilities

Klemen Sušnik  
B&B izobraževanje in usposabljanje d.o.o.

#### *Povzetek*

*Internacionalizacija je koncept, ki mu resna izobraževalna organizacija v sodobnem času preprosto mora slediti. Njen namen je opremiti deležnike v izobraževanju z medkulturnimi vsebinami in kompetencami, ki omogočajo delo v medkulturnem svetu. Evropska komisija z različnimi programi, med katerimi je tudi Erasmus+, sofinancira in spodbuja organizacije k delovanju v mednarodnem okolju.*

*Na primeru Izobraževalnega center B&B smo predstavili proces vključitve v projekt Erasmus+. Organizacija je pripravila celovito strategijo internacionalizacije in se s pridobljeno Univerzitetno listino Erasmus+ 2020 zavezala k upoštevanju in spoštovanju načel ECHE. Nadalje so v mobilnost vključili vse deležnike: zaposlene, predavatelje in študente.*

*Ugotavljamo, da večšine in kompetence, ki so jih posamezniki pridobili na mobilnosti, vplivajo na osebni in karierni razvoj. V tujem okolju spoznajo svoje prednosti in slabosti, začnejo razmišljati bolj kritično in lažje sodelujejo z ljudmi iz drugih kultur. Karierno so izboljšali svoje spretnosti, povezane s področjem delovanja, postali so bolj odprti in radovedni za nove izzive in se bolje prilagajajo in odzivajo v novih situacijah. Z vključevanjem v mednarodni prostor udeleženci prispevajo k modernizaciji študijskega procesa in širijo pozitivne vrednote, da nas medkulturnost bogati in nadgrajuje.*

**Ključne besede:** internacionalizacija, Erasmus+, izobraževalna organizacija, mobilnost, karierna rast

#### *Abstract*

*Internationalization is a concept which educational organization simply has to follow. Their purpose is to provide intercultural competences to all participants who are involved in the educational process. Through various programs, including the Erasmus+, European Commission co-finances and encourages organizations to operate in an international environment.*

*In the case of the B&B Training Center, we presented the process of joining the Erasmus+ program. The organization has prepared a comprehensive strategy of internationalization and, through the acquired Erasmus Charter for Higher Education (2020), committed itself to*

*respecting and adhering to ECHE principles. Furthermore, they involved all participants in mobility; employees, lecturers and students.*

*We find that the skills and competences acquired by individuals on mobility, affecting the personal and career development. In a foreign environment, they learn about their strengths and weaknesses, start thinking more critically, and more easily interact with people from other cultures. From a career perspective, they have improved their own field-related skills, become more open-minded and curious about new challenges, and better adapt and respond in new situations. By engaging in mobility, the participants contribute to the modernization of the study process and spread positive values that enrich and enhance our interculture.*

**Keywords:** *internationalization, Erasmus+, educational organization, mobility, career growth*

## **INFORMACIJSKA PISMENOST STARIH LJUDI V SLOVENIJI**

### **Information Literacy Among the Elderly in Slovenia**

Dr. Barbara Grintal  
Gerontološki raziskovalni inštitut

#### ***Povzetek***

*V informacijski dobi se z informacijsko tehnologijo srečujemo na vseh področjih družbenega delovanja, prav tako pomembno vpliva na delovanje celotne družbe. V sodobnih družbah je zaznati izrazito potrebo po informacijskih znanjih, zato je informacijska pismenost pomembna kompetenca v vseh obdobjih človekovega življenja. Tudi stari ljudje morajo znati kritično uporabljati informacijsko tehnologijo, s pomočjo katere razumejo in kritično presojujejo pridobljene informacije s svetovnega spleta. Rezultati kvantitativne raziskave informacijske pismenosti starih ljudi v Sloveniji kažejo, da so bile starim ljudem za učenje in uporabo informacijske tehnologije pomembne pretekle izkušnje. Stari ljudje informacijsko tehnologijo uporabljajo za pisanje besedil, iskanje informacij in komuniciranje z drugimi ljudmi. S tem so izboljšali svoje jezikovne in spominske sposobnosti, pridobili pomembne informacije za vsakdanje življenje ter se učili in spoznavali nove stvari, kar je pozitivno vplivalo na njihovo samozavest, neodvisnost in socialno vključenost.*

***Ključne besede:*** *informacijska tehnologija, informacijska pismenost, stari ljudje, učenje, socialna vključenost*

#### ***Abstract***

*In the information age, we encounter information technology in all spheres of social activity. It also has a significant impact on the functioning of the entire society. In modern societies, there is a distinct need for information skills, which is why information literacy is an important competence at all stages of human life. Elderly need to be able to critically use information technology to help them understand and critically evaluate information obtained from the Internet. The results of a quantitative survey of information literacy of the elderly in Slovenia show that previous experience with technology has been important to the elderly for learning and using information technology. Elderly use information technology to for writing text,*

*search for information, and for communication with other people. In doing so, they improved their language and memory skills, gained important information for daily life, and learned new things, which positively affected to their self-esteem, independence and social inclusion.*

**Keywords:** *information technology, information literacy, elderly, social inclusion*

## **SODOBNI TEMATSKI POUČENKI IN ZAGATE V OBRAVNAVI SLOVENSkih VOJAŠKO-ZGODOVINSKIH VSEBIN ZA OBLIKOVANJE SLOVENSkih VOJAŠKIH TRADICIJ**

### **Modern Highlights and Dilemmas in Discussing Slovenian Military- Historical Themes to Create Slovenian Military Traditions**

Dr. Valerija Bernik  
Center vojaških šol

#### ***Povzetek***

*Zagate s poudarki v obravnavi slovenskih vojaško-zgodovinskih vsebin za oblikovanje slovenskih vojaških tradicij izhajajo predvsem iz zapletene in kompleksne slovenske politične zgodovine, ki je številčno majhno narodno skupnost vodila skozi različne države in politične sisteme, med katerimi so si nekateri tudi odkrito prizadevali slovenski narod v celoti potujčiti. V tem smislu se kažejo slovenska osamosvojitvena vojna leta 1991 in priprave nanjo kot idealna tema, saj so bili Slovenci v njej enotni in so se združeno borili za mlado Republiko Slovenijo. S poglobljanjem v starejša obdobja 20. stoletja pa naletimo na vojaške dogodke, ki so narod razdelili v različne nasprotujoče si tabore, kot je na primer druga svetovna vojna, ali pa so bili prisiljeni bojevati se za skupno večnacionalno državo, na primer v času prve svetovne vojne, kar poraja mnoge dileme v oblikovanju slovenskih vojaških tradicij. Poleg slovenske osamosvojitvene vojne 1991 se kot odličen poudarek v obravnavi slovenskih vojaško-zgodovinskih vsebin kažejo tudi boji za severno mejo v letih 1918 in 1919, saj so v njih slovenski vojaki in poveljniki bistveno prispevali k nastanku slovenske severne meje, čeprav znotraj večnarodnostne južnoslovanske države. Obravnava obdobja pred 20. stoletjem pa je še bolj problematična, saj so s slovenskega ozemlja izhajali mnogi znameniti vojaški poveljniki, ki pa se niso imeli za Slovence.*

***Ključne besede:*** *vojaško-zgodovinske tematike, slovenske vojaške tradicije, tematski poudarki*

#### ***Abstract***

*Complicated and complex Slovenian political history makes many dilemmas in making decisions about which Slovenian military-historical contents to emphasize to create Slovenian military tradition. Slovenian past led small national community through a variety of governmental and political systems, among which there were some even openly hostile against Slovenian nation. Within this context it seems that Slovenian Independence War on 1991 and preparations for it are an ideal subject to deal with, as Slovenians fought together for the young*



*Republic of Slovenia. Researching older periods of 20<sup>th</sup> century leads us to military events that divided the nation into various opposing camps, such as, for example, the second world war or the first world war, when Slovenian men were forced to fight for the joint multi-national state and it opens new dilemmas within the process of creating Slovenian military traditions. Besides the Slovenian Independence War the battle for the Slovenian northern border in the years of 1918 and 1919 seem to be of great priority for the discussion, as Slovenian soldiers and commanders contributed significantly to the creation of the Slovenian northern border even though within the multinational Yugoslav country. Treating periods older than 120 years, however, seems to be even harder issue, as there are many military commanders, who were born on Slovenian territory, but did not present themselves as Slovenes.*

**Keywords:** *themes in military history, Slovenian military traditions, emphasised themes*

## **POGLED DELODAJALCEV NA ZNANJA IN KOMPETENCE DIPLOMANTOV VIŠJIH STROKOVNIH ŠOL**

### **Employers' Perspective on Knowledge and Competencies of College Level Graduates**

Marina Vodopivec  
BIC Ljubljana

#### ***Povzetek***

*Članek obravnava pomen merjenja pričakovanj in zadovoljstva delodajalcev z izobraževanjem. Raziskava zajema področje terciarnega izobraževanja, točneje izobraževanje na višjih strokovnih šolah (v nadaljevanju VSS) v programih poslovni sekretar in ekonomist. Z vidika teorije trženja so delodajalci obravnavani kot odjemalci in na ta način so tudi proučevana njihova pričakovanja (ter posledično zadovoljstvo) z znanjem in kompetencami, ki so si jih pri njih zaposleni diplomanti pridobili v procesih izrednega izobraževanja na VSS. Rezultate raziskave prikazujemo kot primer ugotavljanja pričakovanj delodajalcev glede znanja in kompetenc in kot napotilo šolam, kaj je v procesu izobraževanja v skladu s temi pričakovanji in kaj ne. Za šole so tako pridobljene informacije pomembne, saj jim pomagajo pri razvoju kurikulumov in hkrati omogočajo hitro ukrepanje pri tistih znanjih in kompetencah, kjer je to potrebno.*

**Ključne besede:** *zadovoljstvo, znanje, kompetence, izobraževanje, izobraževanje kot storitev*

#### ***Abstract***

*Paper discusses the importance of measuring employers' expectations and satisfaction with education. The study covers one area of tertiary education, namely college level education (hereinafter referred to as CLE), specifically programs business secretary and economist. Employers are considered customers as in marketing theory perspective. We studied their expectations and hence satisfaction with the knowledge and competences that graduates they*

*employ obtained in the process of part-time education at CLE. Study is presented as an example of identifying employers' expectations regarding knowledge and competences. It can also serve as a guideline for schools as to what in their process of education meets these expectations and what doesn't. For schools, this information is important because it can help them improve their curriculums.*

**Keywords:** *satisfaction, knowledge, competencies, education, education as services.*

## **POUČEVANJE IN OCENJEVANJE PRI IZOBRAŽEVANJU ODRASLIH – USMERJENOST K USPEHU**

### **Teaching and Evaluation in Adult Education - Oriented to Success**

Dr. Vojko Obrulj

B&B izobraževanje in usposabljanje, Višja strokovna šola

#### ***Povzetek***

*Današnji razvoj znanosti in tehnologije zahtevata in ustvarjata nastanek novih poklicev, zato so tako družba kot izobraževalni sistemi, inštitucije in posamezniki izpostavljeni nenehnim spremembam. Učenje in izobraževanje v sodobni družbi postajata pomembna dejavnika razvoja. Pridobivanje novih znanj in veščin pa ni samo poslanstvo posameznika, temveč je tudi pokazatelj razvitosti družbe.*

*Za uspešno prilagajanje in obvladovanje tovrstnih družbenih sprememb je treba med drugim vzpostaviti ustrezen način izobraževanja in usposabljanja učiteljev – predavateljev in drugega strokovnega kadra v izobraževalnem sistemu, ki pa lahko poteka na formalni ali neformalni ravni. Za vse deležnike, ki sodelujejo v izobraževalnem sistemu, predvsem pri izobraževanju in usposabljanju odraslih, to predstavlja svojevrsten izziv.*

*S ciljem zagotavljanja učinkovitosti in kakovosti v izobraževanju odraslih je zato potreben ustrezen pristop učitelja predavatelja in študenta. Ključni začetni dejavnik pri tem je prepoznavanje kompetenc posameznika ter njegova primerna nadgradnja že osvojenega znanja in veščin.*

*Z uporabo primernih metod učenja, kakovostnega analitičnega raziskovalnega dela, povezanega s praktičnim vidikom uporabnosti osvojenega znanja, je možno doseči cilje v izobraževalnem procesu.*

*V procesu izobraževanja odraslih je treba sistemsko spodbujati in uveljavljati tudi možnosti, kot so uporaba elektronske učilnice, različne ekskurzije in delavnice ter ustrezno ciljno usmerjeno sodelovanje izobraževalne inštitucije – šole in učiteljev z delodajalci.*

*Vsi izvedeni dogodki pa morajo biti tudi ustrezno ovrednoteni, analizirani in zabeleženi kot dobra praksa ali učenje iz izkušenj, ki se lahko prenaša in nadgrajuje skozi celotni izobraževalni proces.*

*Le dobro medsebojno poznavanje, sodelovanje učiteljev, izobraževalne institucije in učečih se oseb zagotavljajo uspeh in in omogočajo nadaljnji razvoj vseh akterjev v izobraževalnem procesu.*



**Ključne besede:** izobraževalni proces, izobraževanje odraslih, učinkovitost, metode poučevanja, ocenjevanje

### **Abstract**

*Today's development of science and technology requires and creates new professions, which is why both society and education systems, institutions and individuals are exposed to constant change. Learning and education in modern society are becoming important drivers of development. The acquisition of new knowledge and skills is not only an individual's mission, but also an indicator of the development of society.*

*Successful adaptation and management of such social changes also require the establishment of an appropriate way of educating and training teachers - lecturers and other professional staff in the educational system, which can take place at a formal or informal level. For all stakeholders involved in the education system, especially in adult education and training, this is a particular challenge.*

*Therefore, in order to ensure efficiency and quality in adult education, a proper teacher-teacher and student approach is required. A key initial factor in this is the recognition of an individual's competencies and his / her appropriate upgrading of already acquired knowledge and skills.*

*Using appropriate learning methods, quality analytical research work related to the practical aspect of the usefulness of the acquired knowledge, it is possible to achieve the goals in the educational process.*

*In the adult education process, additional opportunities such as the use of an e-classroom, various excursions and workshops and appropriate targeted cooperation of the educational institution - schools and teachers with employers should be systematically encouraged and promoted.*

*All the events that have taken place must also be properly evaluated and recorded as good practice or learning from experience that can be transmitted throughout the educational process.*

*Only good mutual knowledge, the cooperation of teachers, educational institutions and learners ensures success, ensures the possible further development of all actors in the educational process.*

**Keywords:** educational process, adult education, efficiency, teaching methods, assessment

# V. *Sekcija Varstvo okolja skozi oči organizacij 2*

## **SMERNICE TRAJNOSTNEGA RAZVOJA V HUMANITARNIH IN RAZVOJNIH PROJEKTIH MEDNARODNE MREŽE ADRA: PRAKTIČNI PRIMER PROJEKTA V MONGOLIJI**

### **Sustainable Development Trends in Humanitarian and Development Projects of International Network ADRA: Practical Case of a Project in Mongolia**

Katja Kotnik  
ADRA Slovenija

#### ***Povzetek***

*Humanitarna in razvojna pomoč nevladne organizacije ADRA je danes v veliki meri povezana z doseganjem trajnostnih smernic Agende 2030 Združenih narodov. Vseh 17 ciljev trajnostnega razvoja je na različne načine vpetih v 9 glavnih področij vpliva organizacije ADRA, ki so: enakost spolov, zdravje skupnosti, program WASH (Water and Sanitation for Health), pomoč otrokom, odziv na naravne katastrofe, socialna pravičnost, lakota in prehrana, preživetje, agrikultura in gospodarska rast.*

*Cilji projekta ADRA v Mongoliji so bili vzpostavitev varne preskrbe s hrano v enem najrevnejših predelov države, ki se imenujejo ger okrožja mesta Ulaanbaatar. Rezultati raziskave z imenom Household Socio-Economic Surveys, ki jo je izvedla Nacionalna statistična pisarna v Mongoliji, indicira, da se revščina v Ulaanbaatarju povečuje hitreje kot v katerem koli drugem urbanem ali podeželskem mestu v Mongoliji. Tu živi okoli 45 % celotne populacije, zato Ulaanbaatar postaja visoko prenaseljeno mesto. 68 % vseh oseb v Ulaanbaatarju živi v ger okrožjih, kjer je zaposljivost v primerjavi z nacionalnim povprečjem veliko nižja. Projekt z imenom MEAL (Micro Economics and Agriculture Learning) nevladne organizacije ADRA Mongolija se je osredotočal na pomoč ranljivim vrtnarjem, še posebno tamkajšnjim ženskam. Praktični primer izvajanja projekta v razvijajoči državi, kot je Mongolija, je predstavljal dober poligon za učenje o humanitarno-razvojnem delu na področju trajnostnega razvoja, kjer poleg ekstremnih vremenskimi razmer in izjemno nizke samooskrbe z zdravo hrano, obstajajo kulturne ovire in izzivi pri učenju o ekonomski neodvisnosti.*

***Ključne besede:*** NVO, Agenda 2030, mednarodna humanitarna organizacija, razvojni projekt

## **Abstract**

*Humanitarian and development help of ADRA NGO is today highly connected with achieving sustainable development goals from 2030 Agenda of the United Nations. All 17 SDGs are in different ways integrated in 9 main impact areas of ADRA, which are: gender equity, community health, WASH program, helping children, disaster response, social justice, hunger and nutrition, livelihoods and agriculture and economic growth of population.*

*The Mongolian ADRA project aimed to establish food security in one of the poorest urban areas in the country called the ger districts of Ulaanbaatar. Results from Household Socio-Economic Surveys conducted by the National Statistics Office in Mongolia indicate that Ulaanbaatar is experiencing more rapid increases in poverty rates than other urban and rural areas in Mongolia. 46% of all population lives in Ulaanbaatar, thus, it has become greatly overpopulated. 68% of the total population of Ulaanbaatar lives in the ger districts. According to the World Bank, the ger districts also have the highest rate of unemployment in the country. This is practical example of a project in a developing country like Mongolia was a good polygon for learning about humanitarian-development work in the area of sustainable development, where besides extreme weather conditions, highly low self-sustainability with healthy food there are also cultural obstacles and challenges with learning about economic self-sustainability. Overall, the MEAL project's purpose was to help vulnerable home gardeners, particularly women, in the ger districts of Ulaanbaatar to improve their living standards and increase their self-sustainability.*

**Keywords:** *NGO, Agenda 2030, international humanitarian organization, development project*

## **TRAJNOSTNI RAZVOJ IN KULTURNE RAZLIKE**

### **Sustainable Development and Cultural Differences**

Dr. Helena Povše  
HP Consulting

#### **Povzetek**

*Kultura ima močan vpliv na vse vidike družbe. Generalna skupščina Združenih narodov je potrdila Strategijo za trajnostni razvoj 2030, ki vključuje poleg gospodarske, socialne in okoljske tudi kulturno razsežnost. Kulturna inteligenca vsakega od nas lahko k temu prispeva v kognitivnem (da imamo znanje o kulturnih razlikah) in vedenjskem smislu (da imamo sposobnost verbalnega in neverbalnega sodelovanja v družbi različnih kultur), kar je namen te predstavitve.*

*Koncept kulture v literaturi ni enotno opredeljen. Sestavine, ki pomagajo prepoznavati razmišljanja in vedenja ljudi iz različnih kulturnih okolij, so: jezik, običaji in vrednote. Izziv so predvsem kulturne razlike, saj hkrati najdemo napovedi, da bodo zaradi razvoja globalizacije izginile, kot tudi, da bo svet ostal močno heterogen.*

*Kulturne razlike same po sebi ne ustvarjajo težav, ustvarjajo jih načini, kako te razlike razumemo, merimo in nanje reagiramo. Zato bomo podrobneje predstavili razlike v porazdelitvi moči, moškosti, individualizmu, izogibanju negotovosti in dolgoročni*

*naravnosti, ki so po mnenju mnogih najvplivnejše dimenzije merjenja kulturnih razlik, katerih avtor je Hofstede (1980). Prikazali bomo uporabnost teh dimenzij, rezultate meritev pa predstavili na primeru Slovenije.*

*Kritiki očitajo avtorju predvsem polarizirano merjenje kulturnih razlik in tudi, da za poslovna okolja objektivno merjenje na nivoju narodov ni zadostno. Treba je dodati subjektivna merjenja – interpretacijo resničnosti, ki izhaja iz posameznikovih notranjih psihičnih pojavov. V tem smislu je treba dimenzije kulturnih razlik dopolniti s psihično distanco.*

***Ključne besede:*** trajnostni razvoj, kultura, kulturne razlike, psihična distanca

### **Abstract**

*Culture has a profound effect on all aspects of society. The UN General Assembly endorsed the 2030 Sustainable Development Strategy, which includes culture in addition to its economic, social and environmental dimensions. The cultural intelligence of each of us can contribute to this in a cognitive sense (that we have knowledge of cultural differences) and in a behavioral one (that we have the ability to verbally and non-verbally participate in the society of different cultures), which is the purpose of this presentation.*

*The concept of culture is not uniquely defined in the literature. The ingredients that help identify the thinking and behavior of people from different cultural backgrounds are: language, customs and values. Cultural differences are a challenge, because we find predictions at the same time, that they will disappear as a result of the development of globalization and that the world will remain highly heterogeneous.*

*Cultural differences themselves do not create problems, they are created by the ways in which we understand, measure and react to these differences. Therefore, we will introduce in more detail the differences in the distribution of power, masculinity, individualism, avoidance of uncertainty and long-term orientation, which are considered by many to be the most influential dimensions for measuring cultural differences. The author is Hofstede (1980). We will show the usefulness of the dimensions and present the results of the measurements on the example of Slovenia.*

*Above all, the author is being criticized. He is blamed, in particular, for the polarized measurement of cultural differences, and also that objective measurement at the national level is not sufficient for business environments. It is necessary to add subjective measurements - an interpretation of reality that arises from the inner psychic phenomena of individuals. In this sense, dimensions of cultural differences are expanded into psychic distance.*

***Keywords:*** sustainable development, cultural differences, psychic distance

# AGROEKOLOGIJA KOT ALTERNATIVNI RAZVOJNI MODEL

## Agroecology as an Alternative Development Model

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### *Povzetek*

*Agroekologija kot alternativni, progresivni in transdisciplinarni okvir dobiva vse večji pomen za tiste, ki delajo na stičišču med ohranjanjem biotske raznovrstnosti in razvojem kmetijstva. Koncept je bil skupaj zasnovan skozi kmečka gibanja in z družboslovnimi raziskovalci, zato vključuje formalno znanost in neformalne (tradicionalne) oblike znanja. Danes je ta okvir formalno sprejet kot veljavni pristop različnih mednarodnih organizacij, vključno z Organizacijo za hrano in kmetijstvo Združenih narodov in številnimi donatorskimi agencijami. Nekatere vlade so bile opredeljene kot "prijatelji agroekologije". Kot znanost, praksa in gibanje poskuša agroekologija povezati ne le različne perspektive in znanstvene discipline, ampak tudi priznati delovanje različnih družbenih skupin, ki vključujejo marginalizirane narode, kot so staroselske skupnosti, kmečka gibanja in ženske skupine. Ta gibljiva interpretacija agroekologije določa, da je njena politična razsežnost povzročila veliko diskurza in tudi napetosti na razvojnem prizorišču. Prispevek bo predstavil pregled različnih načinov, kako različni akterji po svetu uporabljajo in konceptualizirajo agroekologijo, kjer je bila, po različnih zbirkah podatkov in študijah primerov, uspešna. V zaključku je predstavljena analiza pomanjkljivosti in prednosti okvirjev ter priložnosti za prihodnost.*

***Ključne besede:*** agroekologija, agrobiodiverziteteta, družbena gibanja, razvoj, participativne raziskave

### *Abstract*

*Agroecology as an alternative, progressive and transdisciplinary framework is gaining increasing importance for those working on the interface between biodiversity conservation and agricultural development. Co-designed in by peasant movements and social science researchers, it seeks to include both formal science and informal (traditional) forms of knowledge. It today has also been formally adopted as a valid approach by international organisations including the Food and Agriculture organisation of the United Nations and many donor agencies. Governments as "friends of agroecology" have been identified. As a science, practice and movement it seeks to link not only different perspectives and scientific disciplines but also recognise the agency of diverse social groups, involving marginalised peoples such as indigenous communities, peasant movements and women groups. This movement interpretation of agroecology defines its inherent political dimension has lead to a lot of discourse, as well as tensions in the development arena. This conference talk will give an overview of the different ways in which agroecology is applied and conceptualised around the world by different actors, where it has yielded success according to different data sets and case studies. It will conclude with an analysis of weaknesses and strengths of the frameworks, and opportunities for the future.*

***Keywords:*** agroecology, agrobiodiversity, social movements, development, participatory research

# RECIKLAŽNA DELAVNICA

## Recycling Workshop

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RECIKLAŽA, šivanje recikliranih izdelkov

### *Povzetek*

*Po končanem študiju iz biologije in selitvi v Slovenijo sem si po spletu različnih okoliščin zgradila šiviljsko delavnico, v kateri predelujem odvržene kavbojke in zavese v vrečke (Re.Vrečke), torbe, namenjene ponovni uporabi pri nakupovanju, in druge uporabne predmete. Cilj delavnice je, da se s konkretno dejavnostjo odziva na globalni problem onesnaženja okolja z vrečkami za enkratno uporabo. Kot glavno surovino uporabljam odpadni material. Tako uresničujem načela krožnega gospodarstva, ki je eden od stebrov trajnostnega razvoja. Sodelujem s Komunalo Radovljica, za katero tudi šivam posebno kolekcijo promocijskega materiala. V prihodnosti pa želim z njimi tudi tesneje sodelovati na področju ozaveščanja in učinkovite komunikacije. Cilj je prepričati ljudi, da postanejo odpadki osrednja tema njihovega vsakdanjega življenja in da spoznajo pot, ki jo prepotuje zavržen odpadek od zabojnika do predelave ali uničenja. Kljub pestri ponudbi vrečk za ponovno uporabo se potrošniki za uporabo teh množično ne odločajo. Hočem se usmeriti direktno nanje, ne le s končnim izdelkom, ampak jih želim vključiti v proces izdelave, tako da tudi sami priskrbijo surovino. Sešiti vrečko ni izziv, izziv je, da se jo redno uporablja.*

***Ključne besede:*** ponovna uporaba, odpadek kot surovina, vrečka, ozaveščanje

### *Abstract*

*After completing a bachelor's degree in Biology and moving over to Slovenia, I have, due to different circumstances, created myself a sewing workshop, where I reuse scrap jeans and curtains into reusable shopping bags and sacks and other useful items. Workshops goal is to respond to the global problem with single use plastic bag pollution. Waste material is used as the main resource. This is how the circular economy, as one of the main cornerstones of sustainable development, comes true. I cooperate with Komunala Radovljica, where special collection of promotional material is being created. In the future I wish to get more involved in the fields of awareness and effective communication. I want that the people recognize waste as their main subject of their everyday life and that they will exactly know the way the waste they create travels from the bin to recycle or destruction point. Although the offer of reusable shopping bags is wide, the customer still refuses to use it in masses. I want to focus directly on them, not only with the product but also with their involvement in gathering resources. To sew a bag is not at all a challenge; to make its usage regular, it definitely is.*

***Keywords:*** reuse, waste as a raw material, bag, awareness



# OKOLJEVARSTVE ZAHTEVE PRI RAZVIJANJU PROIZVODOV

## Environmental Product Development Requirements

Janez Dulc  
ICES, višja strokovna šola

### *Povzetek*

*Razvijanje (proizvodov) je osrednji del celovitega trženjskega procesa, ki se začne z raziskovanjem. Razvijanje je zaključeno, ko to potrdi trg z rezultati, ki so skladni s postavljenimi cilji na začetku trženjskega procesa. Cilji niso samo trženjski in finančni. Pomembna je kakovost (odličnost), tudi družbena odgovornost. Vsaka organizacija mora s svojim nastopanjem na trgu zadovoljiti vsa pričakovanja in zahteve vseh deležnikov, ki nastopajo v trženjskem okolju, ne samo neposrednih kupcev in uporabnikov. Kot element kakovosti se morajo pravilno razumeti in obravnavati ter ustrezno vključevati v razvijanje tudi varnost in varovanje okolja za vse sodelujoče v nastajanju proizvodov in njihovi distribuciji ter seveda v uporabi. Proizvajalci morajo zagotoviti skladnost proizvoda z zahtevami tehničnih predpisov, poleg varnosti predvsem glede učinkovite rabe energije in zahtev o energetski učinkovitosti proizvodov. Po končani življenjski dobi proizvoda mora biti poskrbljeno za njegovo odstranitev iz uporabe brez negativnega vpliva na okolje. Postati mora odpadna surovina, ki se jo ponovni vključi v nastajanje novega proizvoda. Varnost, varstvo okolja, krožno gospodarstvo in družbena odgovornost, s tem pa: človek, njegova varnost in zdravje, okolje in skrb za njegovo ohranitev morajo biti pri razvijanju na prvem mestu, pred interesi kapitala.*

***Ključne besede:*** *razvijanje novih proizvodov, tehnična zakonodaja, varnost, varstvo okolja, energetska učinkovitost, družbena odgovornost*

### *Abstract*

*(Product) development is a central part of a comprehensive marketing process that begins with market research. The development process is completed when the market confirms it with results that are consistent with the key performance indicators (KPI), set at the beginning of the development process. It is important to point out that KPIs are not just marketing and financial. During the entire process also quality (excellence) is important, as well as social responsibility. Each organization must meet all the expectations and requirements of all stakeholders in the marketing environment, not only direct customers and users, by their appearance on the market. It is also important that additional to a quality, the development of a product must meet eligible safety and environmental protection requirements. Manufacturers must ensure that the product complies with the requirements of the technical regulations, in addition to safety, notably with regard to and energy efficiency requirements of the products. After the product has reached the end of its lifecycle, care must be taken to remove it from use without adversely affecting the environment. It must become a raw material that is reintegrated into the formation of a new product. Safety, environmental protection, the circular economy and social responsibility, thus: human, its safety and health, the environment and the care for its preservation must be in the first place, above the interests of a capital, in the development.*

***Keywords:*** *new product development, technical legislation, safety, environmental protection, energy efficiency, social responsibility*

# VI. Sekcija Trajnost oskrbovalnih verig

## TRAJNOSTNO UPRAVLJANJE OSKRBOVALNIH VERIG

### Sustainable Supply Chain Management

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#### *Povzetek*

*V času svetovne gospodarske, finančne, socialne, ekološke in še katere krize so podjetja prisiljena v globalno poslovanje, kar postavlja prednje dodatne izzive, kako venomer ohranяти oz. krepiti svojo konkurenčno prednost. Kako strateški menedžment v povezavi s poslovno logistiko združiti v zmagovito zmes, ki bi krepila konkurenčno sposobnost podjetja, bo predmet našega bodočega proučevanja. Razvoj na področju strateškega menedžmenta zajema izboljšave nadzora proizvodnje, nato nadzora posameznih funkcionalnih področij, kot so obvladovanje zalog, planiranje, modeliranje proizvodnih procesov, logistike, prodaje, nabave, zagotavljanje masovne proizvodnje, systemskega razmišljanja in planiranja ter obvladovanje vseh informacijskih tokov. Kljub konkurenci med podjetji in turbulenci na globalnem trgu je bila osnovna struktura proizvodnih podjetij do nedavnega še dokaj stabilna. V bodoče se bo razvoj usmeril v večjo informatizacijo poslovanja, ki bo vplivala na organizacijsko strukturo in na model sprejemanja poslovnih odločitev ter krepitev konkurenčne sposobnosti podjetja. Raziskovalci bodo torej morali v bodoče upoštevati, da velikost problemov v poslovnih sistemih narašča s stopnjo kompleksnosti, časovni pritiski rastejo sorazmerno s krepitvijo konkurence in število orodij za upravljanje poslovne logistike, strateškega menedžmenta ter globalnih oskrbnih verig bo še skokovito naraščalo.*

**Ključne besede:** *globalizacija, globalne oskrbne verige, informatizacija, konkurenčna sposobnost, poslovna logistika, sistemi, strateški menedžment, učinkovitost poslovanja*

#### *Abstract*

*In a time of global economic, financial, social and ecological crisis companies are forced into a global business, which raises additional challenges before them, and how to maintain or constantly strengthen their competitive advantage. How strategic management in conjunction with business logistics to consolidate together in a winning mixture that could enhance the competitive ability of the company will be subject of our future study. Developments in the field of strategic management includes improvements in the control of production and the individual functional areas such as inventory management, planning and modeling of manufacturing processes, logistics and sales, ensuring mass production, systems thinking and planning and management of all information flows. Despite the competition between businesses and turbulence on the global market, the basic structure of manufacturing companies has been fairly stable. The future development will be focused on increasing computerization of operations, which will have an impact on the organizational structure and the model of decision-making and enhance the competitiveness of enterprises. Researchers will therefore be*



*taken into account in the future, the size of the problems in operating systems, increasing the level of complexity, time pressures grow in proportion to the strengthening of competition and the number of tools for managing business logistics, strategic management and global supply chains will continue to grow exponentially.*

**Keywords:** *globalization, global supply chains, computerization, competitiveness, business logistics, systems, strategic management, business efficiency*

## **IZZIVI PRI TRANSPORTU TEMPERATURNO OBČUTLJIVEGA BLAGA**

### **Challenges in Transporting Temperature-Sensitive Goods**

Nataša Sodja  
LOTRIČ Meroslovje d.o.o.

#### ***Povzetek***

*Transportni in logistični procesi so iz dneva v dan vse bolj zapleteni ter razvejani. Število deležnikov, ki so vključeni v logistične verige vrednosti, je vse večje, odnosi med deležniki so vse bolj prepleteni ter povezani, nemalokrat pa tudi soodvisni. Želja, pravica ter mnogokrat zahteva vključenih v ta proces je zagotovitev varnih, kakovostnih transportnih poti za blago, ki mora biti na končnem cilju ob dogovorjenem času. Izjemnega pomena pri zagotavljanju slednjega pa je tudi zagotavljanje konkurenčnosti med vključenimi deležniki. Ključni dejavnik za zagotavljanje varnosti in kakovosti prepeljanega temperaturno občutljivega blaga je tehnična ustreznost vozila, s katerim se opravlja prevoz. Področje je urejeno s Sporazumom o mednarodnem prevozu pokvarljivih živil in specialnih vozilih za njihov prevoz (v nadaljevanju: Sporazum ATP), ki med drugim od držav podpisnic sporazuma, med katerimi je tudi Slovenija, zahteva, da zagotovijo ustrezen nadzor nad zahtevami za vozila, ki jih opredeljuje sporazum. V prispevku bo predstavljeno trenutno stanje na področju prevozov temperaturno občutljivega blaga oziroma pri prevozu – distribuciji hitro pokvarljivih živil. Z namenom razjasnitve kompleksnosti problematike bodo predstavljeni izzivi, s katerimi se srečujejo slovenski prevozniki pri prevozih na domačem – notranjem trgu ter pri mednarodnih prevozih, ter rešitve oziroma predlog ureditve obravnavane tematike.*

***Ključne besede:*** *ATP-sporazum, kakovost, varnost, konkurenčnost, temperaturno občutljivo blago*

#### ***Abstract***

*Transport and logistics processes are becoming more complex and diversified day by day. The number of stakeholders involved in logistics value chains is increasing, and the relationships between stakeholders are progressively more intertwined and interconnected, and often interdependent. The desire, the right and many times the requirement involved in this process is to provide safe, quality transport routes for goods, which must be at their final destination at the agreed time. Along with this, it is also crucial to ensure the competitiveness of the*

*stakeholders involved. The key to ensuring the safety and quality of temperature-sensitive goods in transportation is the technical suitability of the vehicle used for the transport. This area is governed by the Agreement on the International Carriage of Perishable Foods and the Special Equipment to be used for such Carriage (hereinafter referred to as the ATP Agreement), which requires, inter alia, signatory countries, including Slovenia, to ensure adequate control over the requirements for vehicles, as defined by the agreement. This article presents the current situation in the field of transport of temperature-sensitive goods, and the transport and distribution of perishable foodstuffs. In order to clarify the complexity of the problem, the challenges that Slovenian carriers face in transport in the domestic-internal market and in international transport will be presented, as well as solutions and a proposal for the regulation of the topic discussed.*

**Keywords:** ATP Agreement, quality, safety, competitiveness, temperature-sensitive goods

## **POMEN RAZVOJA TEHNOLOGIJ ZA IZVEDBO LOGISTIKE PRVEGA IN ZADNJEGA KILOMETRA PREVOZA BLAGA ZA RAZVOJ PAMETNIH MEST**

### **The Importance of Developing Technologies for the Implementation of Logistics of the First and Last Kilometer of Goods Transportation for the Development of Smart Cities**

Mag. Branko Lotrič  
B&B Visoka šola za trajnostni razvoj

#### ***Povzetek***

*Z razvojem informacijskih tehnologij (IT) je postal dostop do spletnih trgovin običajno pričakovanje potrošnikov. Za trgovce pa sta najpomembnejša lokacijski in časovni izziv dostave blaga. Začetki interneta stvari (IoT) odpirajo možnosti sporazumevanja med stvarmi, povezanimi v mrežo fizičnih objektov, ki imajo IP-naslov za internetno povezljivost. V razvoju je inženiring znanja, ki predstavlja temelj umetne inteligence (AI). Stroji lahko delujejo in reagirajo podobno ali enako kot ljudje, če imajo dovolj informacij o problemu, ki ga obravnavajo. Razvoj tehnike z naprednimi informacijskimi orodji skoraj nima več omejitev. Pametna električna vozila (EV) in avtonomna zemeljska vozila (AGV) ter droni že danes izpolnjujejo pogoje za delovanje v idealnih okoliščinah. Urbanizacija mest tega še ne omogoča in predstavlja še nerešene izzive dostave na zadnjem kilometru. Število prebivalcev, ki prebivajo v mestih, skokovito narašča. Prav tako se povečuje prometna obremenitev mest. Zaradi zastojev v prometu se izgubi obilo časa, povečuje se onesnaženost okolja. Vse našete parametre, ki so pogoj za optimizacijo oskrbe mest s standardiziranimi tehnologijami, je treba povezati v celoto, ki bo zagotavljala časovno, energetska, okoljska, prometna in socialna vzdržna oskrbovanje mest s stvarmi.*

**Ključne besede:** dostava blaga, umetna inteligenca, pametna vozila, avtonomna vozila, optimizacija oskrbe

### **Abstract**

*With the development of information technology (IT), access to online stores has become a common consumer expectation. For merchants, however, the most important is the location and time challenges of delivering goods. The beginning of the Internet of Things (IoT) opened up opportunities for communication between things connected to a network of physical objects that have an IP address for Internet connectivity. The development of knowledge is the basis of artificial intelligence (AI). Machines can act and react similarly to or in the same way as humans if they have enough information about the problem they are addressing. The development of technology with advanced information tools is almost without limits. Smart electric vehicles (EVs) and autonomous ground vehicles (AGVs) and drones already qualify for ideal conditions today. Urbanization of cities does not allow this yet, and it presents the unresolved challenges of last-mile delivery. The number of residents living in cities is increasing rapidly. The traffic load of cities is also increasing. Traffic congestion is a waste of time and is a contributing factor for environmental pollution. All these parameters, which are a pre-requisite for optimizing the supply of cities with standardized technologies, should be integrated as a whole, thus ensuring a temporal, energetical, environmental, transportable and socially sustainable supply of cities with items.*

**Keywords:** goods delivery, artificial intelligence, smart vehicles, autonomous vehicles, supply optimization

## **VARNOST OSKRBOVALNIH VERIG GLEDE NA POREKLO GROŽENJ IN TVEGANJ**

### **Security of Supply Chains Based on the Origin of Threats and Risks**

Dr. Gregor Garb  
Samostojni raziskovalec

#### **Povzetek**

*Globalizacija, univerzalizacija in informacijska revolucija ter posledično tudi visoka stopnja soodvisnosti s spremljajočimi procesi prinašajo tudi vsa tveganja oziroma povečujejo svoj vpliv na stopnjo varnosti, s tem pa tudi na njeno ceno. Torej, večji kot so učinki in posledice globalizacijskih procesov, večja sta raznovrstnost in vpliv sodobnih varnostnih tveganj in groženj na varnost različnih referenčnih objektov, vključno z oskrbovalnimi verigami. V sodobni varnostni paradigmi niso zanemarljive niti sinergijske povezave med številnimi tveganji in grožnjami, ki lahko iz povsem nenevarnih in lokacijsko izoliranih ter nepovezljivih prerastejo v povsem realne, predvsem zaradi svoje številčnosti in splošnih globalizacijskih trendov. Njihovi nosilci so praviloma nedržavni subjekti, po naravi pa so kompleksni, pogosto težko predvidljivi in imajo lahko multiplikatorski značaj ter učinek. Viri ogrožanja in tveganja varnosti oskrbovalnih verig se iz vidika porekla pojavljajo na globalni, nadnacionalni in*

*nacionalni ravni. Večdimenzionalnost razumevanja ogrožanja varnosti oskrbovalnih verig se danes odraža skozi procese zaznavanja, analiziranja in ocenjevanja, preprečevanja in blaženja posledic, razširjanja pridobljenih znanj in njihova integracija. Le celovit pristop vseh dejavnikov pri izvajanju politik in postopkov ter koordinirano delovanje varnostnih mehanizmov in instrumentov pri sodobnem upravljanju oskrbovalne verige zagotavljajo obvladovanje tveganj, ki je eden od ključnih elementov za uspešnost njenega delovanja.*

**Ključne besede:** *sodobni viri ogrožanja in tveganja, sodobna varnostna paradigma, varnost oskrbovalnih verig, upravljanje oskrbovalnih verig*

### **Abstract**

*Globalization, universalisation and the information revolution, and consequently the high degree of interdependence with the accompanying processes, bring all the risks or increase their influence on the level of security, and therefore on its price. Therefore, the greater the effects and consequences of globalization processes, the greater the variety and impact of modern security risks and threats on the security of various reference facilities, including supply chains. In the modern security paradigm, the synergistic links between many risks and threats, which can grow from completely non-hazardous and locally isolated and irreconcilable ones into purely realistic ones, are negligible. That is mainly due to their abundance and general globalization trends. As a rule, driven by non-state actors, whose nature is complex and often hard to predict and which may have a multiplier character and effect. Sources of threat and risk to supply chain security, with regard to their origin, occur at the globally, transnational and national levels. The multidimensional understanding of the threats to supply chain security is nowadays reflected in the processes of awareness, analysing and evaluating, preventing and mitigating the consequences, disseminating knowledge and integrating them. Only a comprehensive approach of all factors in the implementation of policies and procedures and the coordinated operation of security mechanisms and instruments in modern supply chain management, ensure risk management which is one of the crucial elements for the successful functioning of the supply chain.*

**Keywords:** *modern sources of threat and risk, modern security paradigm, security of supply chains, supply chain management*

# TRAJNOST OSKRBOVALNIH VERIG

## Sustainability of Supply Chains

Ajda Lotrič

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### *Povzetek*

*Trajnostni razvoj je del poslovnega sveta že več kot 30 let. Število podjetij, ki postajajo bolj okolju in človeku prijazna, narašča in prav tako se konkurenca le povečuje. Vendar kaj pomeni biti trajen? Kaj pomeni imeti trajnostno oskrbovalno verigo? Trajnost ima tri veje, na katerih stoji celoten princip – socialni, okoljski in ekonomski razvoj. Problemi, ki se pojavljajo znotraj posamezne točke, so številni in boj proti izboljšanju narašča s številom novo odkritih rešitev in predvsem s sodelovanjem številnih okoljevarstvenih organizacij. Ostajanje v koraku s socialnim razvojem prinaša podjetjem veliko prednost v boju proti izkoriščanju delovne sile in uresničevanju ciljev za enakovredneje plačano delo, tudi v manj razvitih državah. Dandanes velika podjetja težko popolnoma nadzirajo celotno oskrbovalno verigo in zato imajo lahko številna podjetja negativne rezultate v svojih poročilih o družbeni odgovornosti (angleško: Corporate Social Responsibility – CSR). Z izboljšanimi navodili in pogodbami se učinki lahko izboljšajo in prinesejo dodatne bonuse. Ena od najbolj perečih tem v današnjem poslovnem svetu je okoljevarstvo in podjetja se zavedajo svoje vloge v reševanju Zemlje s spreminjanjem svojega delovanja. Ni treba, da gre za velike spremembe, tudi manjši detajli lahko pripomorejo k učinkovitejšemu delovanju industrijskih obratov in ostalih operacij. Razvijanje rešitev za okoljske probleme, ki se pojavljajo znotraj podjetij, je mnogokrat naloga okoljevarstvenika, zaposlenega v podjetju. Zadnja točka je ekonomski razvoj – kljub vsem lepim stvarim, ki jih trajnostni razvoj prinaša, je denar eden glavnih indikatorjev, kako uspešno bo podjetje pri izvrševanju teh. Številne raziskave kažejo, da je vložek za bolj okolju in človeku prijazno podjetje visok, vendar se skozi leta uspešnega delovanja in dobre promocije vrne v velikih številkah. Zato je treba seznaniti podjetja ne le z negativno krivuljo takoj po začetku operacij, vendar tudi narediti načrt za prihodnost in premišljeno vlagati denar v prave oddelke za boljši trajnostni razvoj.*

**Ključne besede:** trajnostni razvoj, oskrbovalne verige, zeleni razvoj, problemi

### *Abstract*

*Sustainable development is a part of the business world for more than 30 years, and numbers of companies becoming environmentally and human-friendly are increasing considerably. However, what does it mean to be sustainable? What does it mean to have a sustainable supply chain, which is after all one of the essential tasks of the company? Sustainability has three branches on which the main focus points stand on – social, environmental and economic development. Problems that appear among separate branches are numerous and fight for a better world is steadily growing, especially with the help of many environmental organisations and laws. Being in step with social development is bringing companies a significant advantage in the fight towards better working conditions for people and working towards fairer wages, even in less developed countries. Nowadays, more prominent companies have a harder time controlling conditions in supply chains, and numerous negative consequences and commentaries can follow that in Corporate Social Responsibility reports (CSR). With*



*improving, guidelines and contracts, the effects of human overstress can improve and shine a great light on the company. One of the most significant themes in today's world is being environmentally friendly. Companies – especially those working in toxic conditions for nature, are aware of their effects on the environment and are trying to develop. Updating and improving their operations, better control and more carefully planned operations can be only small tasks but can bring significant changes in fight for a better and cleaner world. Development of more sustainable machines and other types of procedures are usually in the hands of an environmentalist who knows where and how changes can be made. The last point is economic development, and despite all the grand factors that sustainability is bringing, money is most often the one narrating what can be improved and if that improvement is even possible. By numerous researches investments for more sustainable operations are high, but over the years the money gets overturned. There is also the future to which companies have to be introduced to and turn focus to and not only generate the low points of economic income in the present moment. Right introduction of the sustainable economy can significantly help companies and make high revenues over the future years.*

**Keywords:** *sustainability, supply chain, green development, issues*

## **ANALIZA PREHRANSKIH OSKRBOVALNIH VERIG Z VIDIKA OKOLJSKEGA ODTISA**

### **Analysis of the Food Supply Chains from an Environmental Footprint Perspective**

Dr. Marijan Pogačnik  
Biotehniški center Naklo

#### ***Povzetek***

*Naraščanje števila svetovnega prebivalstva za približno 1,5 % na leto pomeni, da so napovedi o približno 9 milijardah prebivalstva leta 2050 realni. Eden od ukrepov Združenih narodov je oskrbeti skoraj 800 milijonov slabo preskrbljenih oz. lačnih prebivalcev v Aziji in Afriki in zagotoviti minimalne standarde za prehrano. Projekcije do leta 2050 kažejo, da bo treba pridelavo hrane povečati za 30 %. Pri tem se pa srečujemo s prevelikim obremenjevanjem okolja, saj kmetijstvo prispeva več kot 10 % emisij toplogrednih plinov (CO<sub>2</sub> ekv) neposredno. Z boljšim načrtovanjem, spremljanjem in spreminjanjem sistemov pridelave lahko zmanjšamo ogljični odtis posameznega prehranskega izdelka ali celotne panoge. Zato so nekatere trgovske verige (TESCO ...) že začele navajati ogljični odtis pri posameznih izdelkih.*

*V članku smo analizirali prehransko oskrbovalno verigo, ki zajema pridelavo, predelavo, skladiščenje, distribucijo in potrošnjo. Največji delež, kar 37 % ogljičnega odtisa v življenjski dobi izdelka, predstavlja potrošnja. V pridelavi lahko zmanjšamo ogljični odtis z boljšim izkoristkom strojev, ki zavzema 49 % emisij, in sistemi pridelave, kjer skrbimo za stalno pokritje obdelovalnih površin. Pri distribuciji ogljični odtis zmanjšamo z lokalno samooskrbo (celotno področje Slovenije) s kratkimi verigami v dobavi, saj sedem naših trgovskih verig obvladuje več kot 85 % celotnega slovenskega trga, hkrati pa povečamo domačo samooskrbo, ki se giblje*

*pri vrtninah in sadju pod 50 %. Hkrati bomo izboljšali negativno bilanco med uvozom in izvozom, ki se giblje v vrednosti več kot 1 milijarde evrov. Z računanjem ogljičnega odtisa za celotno verigo ali posamezni izdelek lahko hkrati tudi izboljšamo produktivnost in donosnost panoge.*

***Ključne besede:*** prehranska oskrbovalna veriga, lokalna samooskrba, ogljični odtis

### **Abstract**

*An increase of the world population by about 1.5% per year means that the projections of around 9 billion people in 2050 are realistic. One of the actions of the United Nations is to supply almost 800 million poor or hungry residents in Asia and Africa and provide minimum standards for nutrition. Projections by 2050 indicate that food production will need to be increased by 30%. In doing so, however, we are facing too much environmental pollution, as agriculture contributes more than 10% of greenhouse gas emissions (CO<sub>2</sub> eq) directly. Better planning, monitoring and modification of production systems can reduce the carbon footprint of an individual food product or industry. Therefore, some retail chains (TESCO...) have already begun to make a carbon footprint for individual products.*

*In the article we analyzed the food supply chain, which covers production, processing, storage, distribution and consumption. Consumption accounts for the major part, 37% of the carbon footprint of a product's lifetime. In production, we can reduce our carbon footprint by better utilizing machines, accounting for 49% of our emissions, and by using crop systems that provide permanent coverage of the cultivated area. In distribution, we reduce our carbon footprint with local self-supply (the entire territory of Slovenia) with short supply chains, as seven of our retail chains control more than 85% of the entire Slovenian market while increasing our domestic self-supply, which ranges from 50% for vegetables and fruits. At the same time, we are going to improve our negative balance between imports and exports, which is worth more than € 1 billion. By calculating the carbon footprint for the entire chain or for a single product, we can also improve the productivity and profitability of the industry.*

***Keywords:*** food supply chain, local self-sufficiency, carbon footprint



# VII. Sekcija Zelena energija

## KROŽNO GOSPODARSTVO

### Circular Economy

Alenka Burja  
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#### *Povzetek*

*Današnji linearni industrijski procesi "vzemi, izdelaj, zavrži" in z njimi povezani življenjski slogi porabljajo omejene vire za ustvarjanje izdelkov z omejeno življenjsko dobo, saj ti običajno končajo na odlagališčih ali v sežigalnicah. Nasprotno temu se krožni pristop zgleduje po živih sistemih. Meni, da bi morali naši sistemi delovati kot organizmi, ki predelujejo hranila, tako da se lahko povrnejo v življenjski cikel – ali biološki ali tehnični – v "zaprti zanki" ali v "regenerativnem" sistemu.*

*Krožno gospodarstvo je gospodarski sistem, katerega cilj je zmanjšanje odpadkov in čim večja izkoriščenost virov. To je mogoče doseči z oblikovanjem izdelkov, ki trajajo dolgo, z vzdrževanjem, popravilom, ponovno uporabo, predelavo, obnavljanjem in recikliranjem. Primer modela krožnega gospodarstva so na primer najemni modeli tradicionalnih lastniških področij (npr. elektronika, oblačila, pohištvo, prevoz).*

*Torej, krožno gospodarstvo vključuje izdelke, infrastrukturo, opremo in storitve ter velja za vse industrijske sektorje in celotno družbo. Vključuje "tehnične" (kovine, minerale, fosilne vire) in "biološke" vire (hrana, vlakna, les itd.). Zavzema se za premik od fosilnih goriv k uporabi obnovljivih virov energije in poudarja vlogo raznolikosti kot značilnosti prožnih in trajnostnih sistemov.*

***Ključne besede:*** krožno gospodarstvo, sistemsko razmišljanje, odpadek kot vir, oblikovanje, novi poslovni modeli

#### *Abstract*

*Today's linear "take, make, dispose" industrial processes, and the lifestyles dependent on them, use up finite reserves to create products with a finite lifespan, which usually end up in landfills or in incinerators. The circular approach, by contrast, takes insights from living systems. It considers that our systems should work like organisms, processing nutrients that can be fed back into the cycle — whether biological or technical — in the "closed loop" or in the "regenerative" system.*

*A circular economy is an economic system aimed at minimizing waste and making the most out of resources. This can be achieved through long lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. One example of a circular economy model is the implementation of renting models in traditional ownership areas (e.g. electronics, clothes, furniture, transport).*

*Therefore, the circular economy includes products, infrastructure, equipment and services, and applies to every industry sector and the whole society. It includes 'technical' resources (metals, minerals, fossil resources) and 'biological' resources (food, fibres, timber, etc). It advocates a*

*shift from fossil fuels to the use of renewable energy, and emphasize the role of diversity as a characteristic of resilient and sustainable systems.*

**Keywords:** *Circular Economy, System Thinkig, Waste as Resource, Design, New Business Models*

## **TRAJNOSTNO RAVNANJE S KOMUNALNIMI ODPADKI V MESTNI OBČINI LJUBLJANA – PRIMER DOBRE PRAKSE**

### **Sustainable Municipal Waste Management in Ljubljana Municipality - a Case of Good Practice**

Mag. Muharem Husić  
B&B Visoka šola za trajnostni razvoj

#### ***Povzetek***

*Javno podjetje Voka Snaga upravlja Regionalni center za ravnanje z odpadki Ljubljana (RCERO Ljubljana), ki ga uvrščamo med najmodnejše objekte za predelavo odpadkov v Evropi. Trenutno je v sistem vključenih 58 občin oziroma kar tretjina slovenskega ozemlja.*

*V sklopu mehansko-biološke obdelave v objektih vsako leto pridobijo približno 60.000 ton trdih goriv iz odpadkov, 35.000 ton digestata po anaerobni obdelavi težke frakcije mešanih komunalnih odpadkov, 6.000 ton lesa, 7.000 ton komposta po obdelavi ločeno zbranih organskih biorazgradljivih odpadkov, 25.000 ton izločenih sekundarnih surovin, 17.000 MWh električne energije in 36.000 MWh toplotne energije iz pridobljenega bioplina v procesu.*

*Cilj trajnostnega ravnanja z odpadki v RCERO Ljubljana je izločanje čim večjega deleža sekundarnih surovin, zmanjšanje energetske porabe in povečevanje recikliranja ter ponovne uporabe nastalih produktov. V želji po zmanjšanju stroškov iščejo nove možnosti predelave in nadgradenj. V Voki Snagi intenzivno iščejo možnosti dodatne predelave digestata v produkt, za katerega ne velja zakonodaja s področja odpadkov. Gre za odpadke iz RCERO, ki jih ni možno uporabiti kot sekundarne surovine za nadaljnjo uporabo. Zato močno podpirajo nadgradnje sistema in izgradnjo objekta za termično obdelavo izhodnih frakcij.*

***Ključne besede:*** *komunalni odpadki, mehansko-biološka obdelava, ponovna uporaba, recikliranje, kompostiranje*

#### ***Abstract***

*The public company Voka Snaga is managed by the Regional Waste Management Center Ljubljana (RCERO Ljubljana), which is one of the most modern waste treatment facilities in Europe. Currently, 58 municipalities or as much as a third of the territory of Slovenia are included in the system.*

*As part of the mechanical-biological treatment, approximately 60,000 tons of solid fuel from waste is recovered in the facilities each year, 35,000 tons of digestate after anaerobic treatment of the heavy fraction of mixed municipal waste, 6,000 tons of wood, 7,000 tons of compost after*

treatment of separately collected organic biodegradable waste, 25,000 tons of recovered secondary raw materials, 17,000 MWh of electricity and 36,000 MWh of heat from the biogas produced in the process.

The goal of sustainable waste management at RCERO Ljubljana is to eliminate as much of the secondary raw materials as possible, reduce energy consumption and increase recycling and reuse of the resulting products. To reduce the costs, Voka Snaga looks for new options for waste management and processing. Voka Snaga is intensively seeking the possibility of further processing the digestate into a product not covered by waste legislation from RCERO, which cannot be used as secondary raw material for further use. Because of this, they strongly support system upgrades and the construction of a facility for thermal treatment of the output fractions.

**Keywords:** municipal waste, mechanical biological treatment, reuse, recycling, composting

## CENOVNA GIBANJA ENERAGENTOV ZA OGREVANJE GOSPODINJSKIH UPORABNIKOV

### Price Movements of Energy Products for Heating Household Users

Dr. Drago Papler  
B&B Visoka šola za trajnostni razvoj

#### *Povzetek*

*V analizi obravnavamo pereče tematsko področje cen energentov in tržne možnosti alternativnih goriv v trženjskem, energetskem in poslovnem smislu. Prikazana sta SWOT analiza in pregled stanja trga različnih energentov za ogrevanje gospodinjskih uporabnikov. Analizirali smo statistične podatke cen energentov s prerezi opazovanega časovnega obdobja ter prikazali gibanje cen z indeksi. V aplikativnem delu so analizirane najnovejše dostopne konkretne cene po strukturi s pomočjo javno dostopnih podatkov za električno energijo, zemeljski plin in lesno biomaso. Izvedli smo preračun ekvivalentnosti energentov in podali rezultate.*

*Ugotovili smo, da se poraba lesne biomase povečuje zaradi ugodnejših cen, zmanjšuje pa se poraba ekstra lahkega kurilnega olja.*

*Na podlagi analize alternativnih goriv za ogrevanje gospodinjskih uporabnikov smo izbrali ekonomsko najprimernejšo rešitev. Gospodinjskim uporabnikom svetujemo, da se ob nakupu nove naprave za ogrevanje namesto naprav na fosilna goriva odločijo za kotel na biomaso (pelete, sekance, brikete ali polena) ali za toplotno črpalko na sekance.*

*Z vidika trajnostnega razvoja imajo alternativna goriva večje ekološke učinke v zmanjšanju emisij toplogrednih plinov.*

**Ključne besede:** *energenti, energetska učinkovitost, cene, multivariatna statistična analiza, okoljski učinki*

## **Abstract**

*The analysis discusses the burning thematic area of energy prices and the market options for alternative fuels in marketing, energy and business terms. The SWOT analysis and market overview of various energy products for heating household users are presented. We analysed the statistical data of energy prices with cross-sections of the observed time period, and showed price trends with indices. In the application part, the latest affordable concrete prices by structure are analysed using publicly available data for electricity, natural gas and wood biomass. We calculated the equivalence of energy products and presented the results.*

*We have established that the consumption of wood biomass is increasing due to more attractive prices, while the consumption of extra light fuel oil is decreasing.*

*Based on the analysis of alternative fuels for heating household users, we have chosen the most suitable solution from the economic point of view. Household users are advised to opt for a biomass boiler (pellets, wood chips, briquettes or logs) or a heat pump instead of fossil fuel appliances when purchasing a new heating device.*

*From a sustainable development perspective, alternative fuels have greater ecological effects in reducing greenhouse gas emissions.*

**Keywords:** *energy, energy efficiency, prices, multivariate statistical analysis, environmental effects*

## **GOSPODARNA ZAMENJAVA NAČINA OGREVANJA ZGLED LOKALNE SKUPNOSTI ZA OSVEŠČANJE OBČANOM**

### **Economic Replacement in the Way of Heating is an Example of Local Community for Raising Public Awareness**

Dr. Drago Papler

B&B Visoka šola za trajnostni razvoj

#### **Povzetek**

*Visoki stroški za ogrevanje so zaradi nenehnega naraščanja cen fosilnih goriv za gospodinjstva in poslovne odjemalce velik strošek. Problem je izbira primerne ogrevalnega sistema, ki je energetske in okoljske sprejemljiv in ekonomsko upravičen. V skladu s Pravilnikom o metodologiji in obveznih vsebinah lokalnih energetskih konceptov (Ur. list RS, št. 74/2009) so občine dolžne analizirati porabo energije in energentov po posameznih področjih in za samoupravno lokalno skupnost kot celoto, analizirati oskrbo z energijo in analizirati emisije. Lokalni energetski koncepti zavezujejo občine k opredelitvi šibkih točk oskrbe in porabe energije z vidika stabilnosti in okoljske sprejemljivosti. Lokalna skupnost načrtuje spremembo sistema za ogrevanje javnih stavb z obnovljivimi viri energije. Analiziramo obstoječe stanje ogrevanja z ekstra lahkim kurilnim oljem in alternativnimi sistemi ogrevanja s toplotno črpalko ali lesno biomaso (sekanci, peleti). Nova naložba upošteva energetske rešitve, ki so okoljsko sprejemljive in gospodarne.*

*Na vzorcu 400 anket smo ugotavljali mnenje med občani lokalne skupnosti o oskrbi z energijo, poznavanju alternativnih energetske rešitev, učinkoviti rabi, uporabi obnovljivih virov energije, ozaveščanju in izobraževanju. Za analizo smo uporabili multivariatno statistično analizo, korelacijsko analizo in faktorsko analizo.*

**Ključne besede:** *energetsko knjigovodstvo, energenti, sistemi ogrevanja, lesna biomasa, ekonomski kazalniki, statistična analiza, korelacijska analiza, faktorska analiza*

### **Abstract**

*The high cost of heating is a major expense due to the continued rise in fossil fuel prices for households and business customers. The problem is opting the right heating system that is energy and environmentally friendly and economically viable. In accordance with the Rules on the Methodology and Mandatory Content of Local Energy Concepts (Official Gazette of the RS, No. 74/2009), the municipalities are obliged to analyse energy and energy products consumption in individual areas and for the self-governing local community as a whole, to analyse the energy supply and to analyse emissions. Local energy concepts oblige municipalities to identify the weak points of the energy supply and consumption in terms of stability and environmental acceptability. The local community plans to replace the system for heating public buildings with renewable energy sources. We analyse the current state of heating with extra light heating oil and alternative heating systems with heat pump or wood biomass (wood chips, pellets). The new investment allows for energy solutions that are environmentally friendly and economical.*

*Based on a sample of 400 surveys, we have ascertained the opinion among local community residents about the energy supply, knowledge of alternative energy solutions, efficient use, use of renewable energy sources, awareness raising and education. The multivariate statistical analysis, correlation analysis and factor analysis were used for the analysis.*

**Keywords:** *energy accounting, energy products, heating systems, wood biomass, economic indicators, statistical analysis, correlation analysis, factor analysis*

# POSLOVNI PROCESI KOMUNALNIH PODJETIJ V LUČI ODGOVORNEGA RAVNANJA S PITNO VODO

## Utility Companies' Business Processes from the Aspect of Responsible Drinking Water Management

Katarina Adžaga Uršič  
E.R.S. Rokada, d.o.o.

### *Povzetek*

*V svojem prispevku bom opisala optimizacijo poslovnih procesov pri upravljanju z naravnimi viri. Pitna voda naj bi v prihodnosti postala najdragocenejša in najpomembnejša dobrina. Že do leta 2025 naj bi 3 milijarde ljudi živelo na področjih, kjer je motena oskrba z vodo.*

*Predstavila bom postopke, ki jim že sledijo nekatera komunalna podjetja v Sloveniji in so pot v racionalno rabo pitne vode. Večina ljudi sploh ne pomisli, kakšno pot prepotuje sleherna kapljica vode, preden priteče iz naših pip. Organizem, sestavljen iz kilometrov vodovodnih cevi, vrste vodohramov, raztežilnikov, črpalk, ventilov, UV-naprav, klorintorjev in merilcev, mora delovati brezhibno, da se zagotovi neoporečna pitna voda. Za ta zapleteni sistem naprav in cevovodov pa skrbijo komunalna podjetja. Soodvisnost vseh vključenih naprav in elementov nadzorujemo s pomočjo informacijskega sistema, ki preko različnih naprav zagotavlja dostopnost podatkov v vsakem trenutku.*

*Podjetje E.R.S Rokada d.o.o. se ukvarja z razvojem programske opreme, ki podpira tovrstno poslovanje. Program s preprostim imenom »Vodooskrba« izboljšuje preglednost nad stanjem in razmerami posameznega dela vodooskrbnega sistema, izkazuje sledljivost opravljenih del, kontrol in drugih postopkov, ki so bili opravljeni na sistemu, omogoča analize časov reagiranja oz. sanacije napak oz. izmerjenih odstopanj itd. Pomemben del informacijske podpore se nanaša tudi na HACCP (zdravstveni nadzor pitne vode). Na tak način komunalna podjetja lahko zagotavljajo ekonomično porabo pitne vode s čim manjšimi izgubami na vodooskrbnem sistemu in čim višjo stopnjo zdravstvene neoporečnosti.*

***Ključne besede:*** pitna voda, vodooskrba, poslovni proces, ekonomičnost, analiza

### *Abstract*

*This paper describes the optimization of business processes in managing natural resources. It is expected that in future drinking water will become the most precious and most important resource. It is estimated that by 2025 already 3 billion people could live in areas where the water supply will be limited.*

*Hereby, an outline of procedures is provided, which have been implemented by some utility companies in Slovenia and should pave the way for a more efficient use of drinking water. Most people don't even think how long each drop of water travels before it reaches our taps. The comprehensive system consisting of many kilometres of water pipes, various types of water tanks, equalisation towers, pumps, valves, UV devices, chlorinators and meters has to operate flawlessly in order to secure drinking water in perfect condition. The operation and maintenance of this complicated system of devices and pipelines are the tasks by utility companies. The interdependence of all the integrated devices and elements is controlled by way of an IT system thus providing on-line accessibility of data with the help of various interfaces.*



*The E.R.S Rokada d.o.o. company is dealing with the development of software supporting such operations. The software under the straightforward name "Vodooskrba" (Water Supply) improves the monitoring of the individual parts of the water supply system, provides traceability of the performed works, checks and other procedures that have been completed within the system, enables the analysis of reaction times or error elimination or even helps to identify discrepancies etc. An important part of the IT support refers also to HACCP (sanitary control of drinking water). This way, utility companies provide efficient use of drinking water with a minimum of losses within the water supply system and a maximum level of sanitary control.*

**Keywords:** drinking water, water supply, business process, economic efficiency, analysis

## **BIOPLIN KOT ALTERNATIVNI VIR ENERGIJE**

### **Biogas as an Alternative Energy Source**

Mitja V. Bavdaž

#### ***Povzetek***

*V današnjem svetu, obremenjenem z mnogimi onesnaževalci, iščemo rešitve, ki bi prispevale k zmanjševanju onesnaževanja okolja. Največji onesnaževalec je živinoreja z izpustom metana v ozračje, drugi veliki onesnaževalec pa je promet (osebna in tovorna vozila, ladijski in letalski promet). Ob iskanju alternativ klasičnim pogonskim gorivom se avtomobilski proizvajalci postopno preusmerjajo k sodobni tehnologiji, vozilom na električni pogon kot rešitvi prihodnosti z nič emisijami. Ne bi pa smeli pozabiti, da sta proizvodnja in razgradnja električnih avtomobilov bolj obremenjujoča za okolje kot proizvodnja in razgradnja avtomobilov na klasična pogonska goriva. Pri elektrifikaciji prometa in masovni uporabi električnih vozil se kot šibka točka kaže tudi (ne)stabilnost električnega omrežja. Ne kaže pa kot koristnega energenta brez premisleka odpisati metana (CH<sub>4</sub>) – biometana, nam bolj poznanega s kratico CNG (Compressed Natural Gas; stisnjen zemeljski plin), saj je sprejemljiv tudi z okoljskega vidika. Služi lahko kot alternativno pogonsko gorivo za promet pa tudi za pridobivanje elektrike in za ogrevanje. Spada v tako imenovani krožni cikel ali bolje rečeno krožno gospodarstvo. Krožno gospodarstvo pa je v srednjeročnem planu Evropske unije. Nekateri države, npr. Nizozemska, pa to že prakticirajo in izvajajo. Raziskovanje in odkrivanje bioplina/biometana je lahko zelo poučno, široko, globoko in zanimivo. Spoznanje uporabne vrednosti bioplina/biometana je lahko izjemno razsvetljuječe. Težava bioplinarn je v tem, da so na zelo slabem glasu. To pa je nastalo predvsem zaradi neznanja in nepravilnega ravnanja z njimi. Lastniki bioplinarn so se namreč pogosto raje odločili izključno za dobiček in kapitalsko korist. Bioplinarne imajo svojo vrednost in svojo perspektivo, ki pa morata biti seveda pravilno izkoriščena. Predvsem pa je treba z bioplinarno pravilno ravnati in uporabljati sodobno tehnologijo in opremo ter jo nenehno posodabljati in redno vzdrževati.*

***Ključne besede:*** CNG, bioplin, biometan, krožno gospodarstvo



## **Abstract**

*In today's world, which is struggling with environmental pollution, we search for solutions on how to contribute to reducing environmental impacts. The largest polluter is animal agriculture with its methane emissions and the second largest is traffic (private cars, trucks, maritime transport, air travel). When searching for alternatives to conventional motor fuels, car manufacturers are gradually turning towards modern technology and electric vehicles as the solution for a zero-emission future. However, it must not be overlooked that the manufacturing and decommissioning of electric cars have an even greater environmental impact than the manufacturing and decommissioning of cars running on conventional motor fuels. When speaking of electrification of transport and mass use of electric vehicles, a weakness can also be seen in the (in)stability of the electrical grid. Methane (CH<sub>4</sub>) – biomethane, which we know best under the CNG abbreviation (compressed natural gas), must not be overlooked as a useful energy source, as it is acceptable also from the environmental aspect. It can be used as an alternative fuel for transport as well as for the production of electricity and for heating. It is part of the circular economy and the circular economy is included in the medium-term plan of the European Union. Some countries, like the Netherlands, are already practicing and implementing it. The researching and discovering of biogas/biomethane can be very educational, broad, deep, and interesting. Discovering the practical value of biogas/biomethane can be exceptionally enlightening. The problem of biogas plants lies in their bad reputation, which stems from a lack of knowledge and the improper use of biogas plants, as biogas plant owners used to focus exclusively on profit and capital gains. Biogas plants have their value and perspective, which must be correctly utilised. It is especially important that biogas plants are used correctly and that they employ modern technology and equipment and are continually updated and regularly maintained.*

**Keywords:** CNG, Biogas, Biomethane, Circular Economy

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