

Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training*)

1. Raziskovalna organizacija (*Research organisation*):

Univerza v Ljubljani, Biotehniška fakulteta

2. Ime, priimek in elektronski naslov mentorja (*Mentor's name, surname and email*):

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3. Šifra in naziv raziskovalnega področja (*Research field*):

4.03.08 *Ekonomika agroživilstva in razvoj podeželja*

4. Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training*):

Navedite tudi morebitne druge zahteve, vezane na usposabljanje mladega raziskovalca (npr. znanje tujih jezikov, izkušnje z laboratorijskim delom, potrebne licence za usposabljanje...).

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Dobro razumevanje znanja in procesov učenja je ključnega pomena za uveljavitev kmetijskih praks, ki so skladne s cilji varstva okolja, narave in prilagajanja podnebnim spremembam. Poznavanje in sprejemanje okoljskih in podnebnih ciljev s strani kmetov je pomemben predpogoj za uspešno uveljavitev višjih okoljskih in podnebnih standardov v primarni kmetijski predelavi, (npr. ekološka pridelava, ohranitveno kmetovanje), proizvodnji in trženju živil ter predelavi stranskih tokov biomase v skladu z načeli krožnega gospodarstva. V luči javnih politik bi se ta zavest odrazila v intenzivnejšem vključevanju v certificirane oblike okoljskih nadstandardov kmetijske pridelave in v intenzivnejšem vključevanju v okoljsko-podnebnne instrumente kmetijske politike, kot so kmetijsko-okoljska plačila.

Stagnacija, oziroma celo nazadovanje nekaterih kmetijsko-okoljskih in podnebnih kazalnikov v slovenskem kmetijstvu nakazujejo, da dinamika razvoja kmetijstva z vidika okoljske trajnosti ne napreduje v družbeno zaželjeni smeri. Eden od dejavnikov, ki prispeva k tej nezadovoljivi situaciji in se mu želimo podrobneje posvetiti v okviru usposabljanja MR, se nanaša na stanje na področju sistema prenosa znanja v kmetijstvu. Le-to se na področjih, kot so varstvo okolja in narave, podnebne spremembe in krožno gospodarstvo, izkazuje kot nezadovoljivo. Teza, ki jo želimo preveriti v okviru programa usposabljanja MR je, da je za izboljšanje stanja na teh področjih potrebna boljša integracija okoljskih in naravovarstvenih znanj v sistem kmetijskega svetovanja in sprememb metod svetovanja. Potreben je tudi razmislek o drugačnih metodah prenosa znanja, ki bi bile bolj celostne in prilagojene lokalnim potrebam.

V okviru programa usposabljanja MR želimo (i) razviti nove pristope prenosa znanja o vsebinah s področja varovanja narave in okolja v kmetijstvu, (ii) preizkusiti njihovo uspešnost in stroškovno učinkovitost in (iii) vzpostaviti sistem kazalnikov in metodologije vrednotenja uspešnosti ukrepov prenosa znanja v kmetijstvu na področju varovanja okolja, narave in prilagajanja podnebnim spremembam.

V okviru (i) razvoja novih pristopov prenosa znanja o vsebinah s področja varovanja narave in okolja v kmetijstvu bo potrebno opraviti sistematičen in celovit mednarodni pregled ter primerjalna analiza različnih pristopov k prenosu znanja na področju varstva okolja in

ohranjanja narave v kmetijstvu. Poudarek bo na pristopih, ki so relevantni tudi v kontekstu slovenskega kmetijstva. V interakciji s ključnimi deležniki (načrtovalci politik, nosilci javne kmetijsko svetovalne službe) bo izvedena preliminarna ocena primernosti različnih novih pristopov v luči izkušenj z dosedanjo organiziranostjo sistema prenosa znanja v okviru kmetijsko-okoljske politike v Sloveniji.

Jedro raziskovalnega dela bo namenjeno (ii) razvoju in preizkusu uspešnosti različnih pristopov k prenosu znanja o vsebinah s področja varovanja narave in okolja v kmetijstvu. V ta namen bi po eni od metod eksperimentalne ekonomike (npr. naključni nadzorovani poskus (randomized control trial, RCT) na statistično značilnem vzorcu kmetij izvedli različne oblike prenosa znanja na različnih sklopih vsebin (ena s področja varovanja okolja, ena s področja varovanja narave in ena s področja prilagajanja podnebnim spremembam). Temu bi sledilo ovrednotenje učinkovitosti različnih pristopov k prenosu znanja z ekonometričnimi pristopi ter stroškovne učinkovitosti izbranih metod prenosa znanja s pristopom analize stroškov in koristi (CBA).

Pri (iii) vzpostaviti sistema kazalnikov in metodologije vrednotenja uspešnosti ukrepov prenosa znanja o vsebinah s področja varovanja narave, okolja in podnebnih sprememb v kmetijstvu bo treba razviti ustrezne teoretične konstrukte, jih prevesti v teste in vprašalnike, z anketiranjem pridobiti ustrezno količino podatkov ter z naprednimi statističnimi metodami (npr. strukturno modeliranje) ovrednotiti rezultate. Na osnovi rezultatov bodo pripravljene verificirani testi in vprašalniki, ki bi jih bilo mogoče uporabiti ali vključiti v sisteme spremljanja in vrednotenja politik.

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A good understanding of knowledge and learning processes is crucial for the implementation of agricultural practices that are in line with the objectives of environmental protection, nature conservation, and adaptation to climate change. Knowledge and acceptance of environmental and climate objectives by farmers is an important prerequisite for the successful implementation of higher environmental and climate standards in primary agricultural processing (eg organic production, conservation farming), food production and marketing, and processing of biomass by-products in line with the circular economy principles. In the light of public policies, this awareness would reflect in more intensive involvement in certified forms of environmentally sustainable agricultural production and in more intensive involvement in agri-environmental and climate change-mitigating instruments of agricultural policy, such as agri-environmental payments.

The stagnation or even decline of some agri-environmental and climate indicators in Slovenian agriculture indicates that the dynamics of agricultural development from the point of view of environmental sustainability is not progressing in the socially desirable direction. One of the factors that contributes to this unsatisfactory situation, which we intend to address in greater detail in the context of the Young Researcher (YR) training, relates to the situation in the field of the knowledge transfer system in agriculture. This is proving unsatisfactory in areas such as environmental and nature protection, climate change and the circular economy. The thesis we want to check within the YR training program is that in order to improve the situation in these areas, a better integration of environmental and nature protection knowledge into the system of agricultural advisory and changes in advisory methods is needed. Consideration should also be given to other methods of knowledge transfer that are more integrated and tailored to local needs.

Within the YR training program, we intend to (i) develop new approaches to knowledge transfer in the field of nature and environmental protection in agriculture, (ii) test their effectiveness and cost-effectiveness, and (iii) establish a system of indicators and methodologies for evaluating the

transfer of knowledge in agriculture in the fields of environmental protection, nature conservation and adaptation to climate change.

As part of (i) the development of new approaches to the transfer of knowledge in the field of environmental protection and nature conservation in agriculture, a systematic and comprehensive international review will be required, including a comparative analysis of different approaches to knowledge transfer in the field of environmental protection and nature conservation in agriculture. The focus will be on approaches that are also relevant in the context Slovenian agriculture. In interaction with key stakeholders (policy planners, public agricultural advisory service providers), a preliminary assessment of the suitability of various new approaches will be carried out in the light of experience with the current organization of the knowledge transfer system within agri-environmental policy in Slovenia.

The core of the research work will be dedicated to (ii) the development and testing of the effectiveness of various approaches to the transfer of knowledge on content in the field of nature and environmental protection in agriculture. To this end, various forms of knowledge transfer would be performed on a statistically significant sample of farms, applying one of the experimental economics approaches (eg randomized control trial (RCT), simulating knowledge transfer on three sets of relevant contents (one in the field of environmental protection, one in the field of nature conservation and one in the field of adaptation to climate change). This would be followed by an evaluation of the effectiveness of different approaches to knowledge transfer using econometric approaches and the cost-effectiveness of selected knowledge transfer methods using a cost-benefit analysis (CBA) approach.

Within (iii) establishment of a system of indicators and methodologies for evaluating the effectiveness of knowledge transfer related to environmental protection, nature conservation and climate change mitigation in agriculture, it will be necessary to develop appropriate theoretical constructs, translate them into tests and questionnaires, to obtain an appropriate amount of data through surveys and to evaluate the results with advanced statistical methods (eg structural modeling). Based on the results, verified tests and questionnaires will be prepared that could be used or included in policy monitoring and evaluation systems.