

<b>QUALITY MANAGEMENT AND INNOVATIVE SOLUTIONS FOR UKRAINIAN DISTANCE EDUCATION AND EDUCATIONAL SERVICES IN LIGHT OF GLOBAL TRENDS FOR DEVELOPMENT OF AGRIBUSINESS ENTITIES</b>			<b>Education</b> <b>Keywords:</b> Distance education, individual educational trajectory, agricultural engineering education, regional and international cooperation, export potential of Agrifood entities development, life-long learning, quality management of educational services.
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<b>Abstract</b>			
<p>Today, when priority direction for implementation of various international programs of financial support and scientific-technical assistance was appointed activity aimed on facilitation for development export potential of agribusiness entities, issues of development and implementation of innovations and modern educational technologies on this area that is also becomes essentially actual and strategically important for Ukrainian economics. However, main restriction for successful implementation of this goal, according to experts, is emerging need in highly qualified engineering and technical personnel, as well as specialists in administration and management, quality management and certification according to international standards considering regional specifics (i.e. “Halal”, “Ekster “, etc.), logistics and other industries related to application of digital technologies and services. Also our study was focused on finding optimal solution for mentioned above problem by means of involvement of conceptual principles and approaches to building comprehensive quality management system for entities of agricultural business, created by providing their educational component and stimulating entrepreneurial, innovative and research activities on this area. In the frameworks of our research were analyzed existing variations of vision on development and promotion of agricultural education in Ukraine comparing with best international experience on this area. Also was paid attention to issues related with implementation of modern methodic and forms of providing educational services in distance format, focusing on aspects of inclusion and development of individual learning trajectories to form required professional competences in experts according to industrial needs and professional requirements of local and international stakeholders. Research outcomes can be considered as recommendations for revising and planning policies on quality assurance of educational services and development of regional and international cooperation between agricultural universities of engineering-technical profile.</p>			

### 1. Introduction: From Strategic Goals to Innovative Solutions

Current article represents methodological recommendations and implemented on practice by scholars of our university solutions for further development of Agrifood industry also relevant educational products and services, perspectives of which were discussed earlier in our economic papers [3; 11].

Traditionally for Ukraine most of regional centers have one or more national agrarian universities with own network of vocational schools, colleges and educational centers that can be situated around the region or beyond ones (i.e. abroad branches and educational units). Since beginning minister’s cadency of Serhiy Shkarlet it was initiated set of reforms aimed on optimization of national higher educational system under requirements of international

institutional stakeholders. Mentioned above reforms have meet wide polemics and critical reflections among heads of leading national higher educational institutions due to their stochastic character and lack of required procedures in accordance with international experience and coherent informational support. Despite negative assumptions and skeptic prejudices from side of some representatives of educational community main targets and landscape of current reforms aimed on optimization of Ukrainian higher educational system were declared in document named “Strategy for development of higher education in Ukraine during 2021–2031” [9]. This document has stated road-map for national reforms in relevance with actual global trends of labor market, economic transformation and digitalization, current interests of international stakeholders and national agenda of sustainable development goals.

New credo of reforms sounds very ambitious: “... to create competitive system based on different kinds and forms of higher educational institutions, that joins researches and business sector to improve by this synergetic cooperation professional and scientific-research potential of Ukrainian nation by providing opportunities of continuous professional and personal development focused on prominent achievements and practical solutions, integrated into the world educational and research space”. Also there were detected seven strategic goals and main areas of risks that are inevitable evil of every reform (see figure 1) in comparison with ability of Kharkiv Petro Vasylenko National Technical University of Agriculture (acronym - KhNTUSG) for risks prevention that is logical outcome of its quality management system that was confirmed by successfully passed certification under requirements of national and international standards [6].

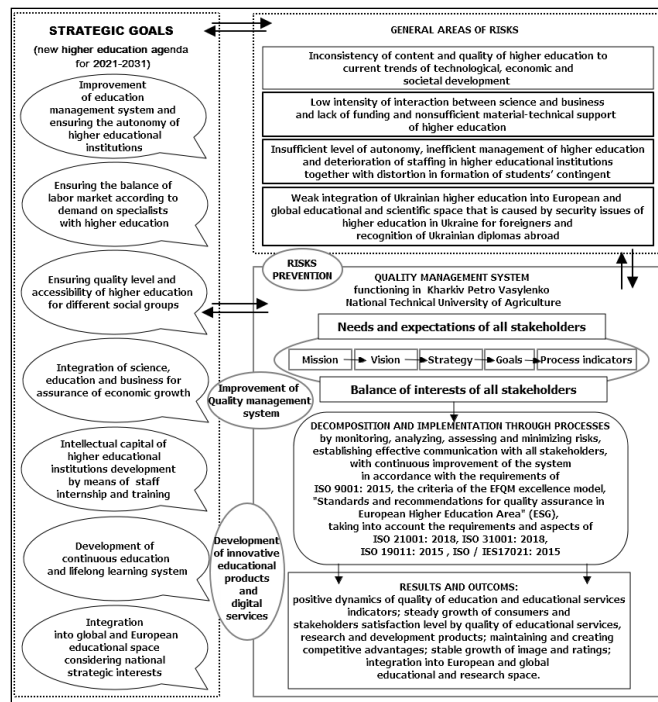


Figure 1. Quality management system of KhNTUSG in action.

State Biotechnological University (acronym - SBTU) was founded on 18 June, 2021 by uniting four leading agro technical universities of Kharkiv region: Kharkiv Petro Vasylenko National Technical University of Agriculture (acronym - KhNTUSG), Kharkiv V. V. Dokuchaev National Agrarian University (acronym - KhNAU), Kharkiv State Veterinary Academy (acronym - KhSVA) and Kharkiv State University of Food Technology and Trade (acronym - KhSUFT). Each of mentioned above universities has great historical heritage and high Scientific-research potential that caused the main reason why following agenda of “Strategy on Improving Higher Education in Ukraine for 2021-2031” and aspiring to gain sustainable development goals for Ukraine, our government decided to found State Biotechnological University as leading innovative agro technical higher education institution of Kharkiv region and Western Ukraine in general. According to quality management system issues for this new University, on our opinion the best solution is to spread existed in Kharkiv Petro Vasylenko National Technical University of Agriculture quality management system for purposes of other three universities recently united into SBTU.

Such multidimensional issue as quality assurance and producing of innovative solutions for Ukrainian distance education and educational services in light of global trends for development of export potential of agribusiness entities can be observed as complex of theoretical and applied tasks with which has faced each national agrarian technical university especially since beginning of COVID-2019 global pandemic. There are some key aspects of this issue close related with role and place of contemporary agrarian technical university as sustainable development hub in current reforms and initial changes in area of Agrifood industry on national and international levels: scientific-research and educational activity and also cooperation, providing R&D and relevant consulting services, life-long learning and in-service trainings etc. That is why mentioned aspects will be discussed below regarding to issues of distance education and educational services in light of global trends for development of agribusiness entities.

## **2. Distance education and educational services for economic growth: theory & practical solutions**

As it was stated in our previous research [11], sustainable development of university depends on its educational environment flexibility, especially from such factors as digital literacy of its staff and readiness to provide educational services in e-learning format. Thus universities to be competitive on international level should have staff of high-experienced and well-trained educators, required material-technical base and methodical support as like as required level of readiness of their abroad structural units (i.e. educational centers, faculties etc.) to provide educational services for learners on high quality level.

Kharkiv Petro Vasylenko National Technical University of Agriculture (acronym–KhNTUSG) has started to provide distance learning services long before the COVID-2019 pandemic that is why capacity of its informational environment and digital infrastructure allowed us to perform smooth transition to distance learning during term of quarantine restrictions introduction. Traditionally

administration of KhNTUSG provides needed resources and informational-methodical support for its learners and educators for training them to work within modular object-oriented dynamic environment Moodle and on digital online platform Google meet. Also for all participants of educational process are provided free corporate access to Scopus and Web of Science digital resources [11, p. 5].

Digitization of educational content for each discipline was carried out long before threat of mentioned above pandemic, including lecture texts, guidelines for preparation for seminars and workshops, guidelines for students' independent work, multi-level sets and other tasks for module and final control. Additional attention was paid to digitization of engine components and mechanisms for online calculations and work with digital models that takes additional human and material resources. Distance learning environment also helps in preparation of university entrants and providing additional educational services as like as advanced training corporate courses for representatives of relevant agribusiness entities [1, pp. 340-343]. According to best world experience, our university has accumulated its resources and human intellectual capital on distance learning products and services improvement [2] together with development of innovative learning products and services (see figure 2).

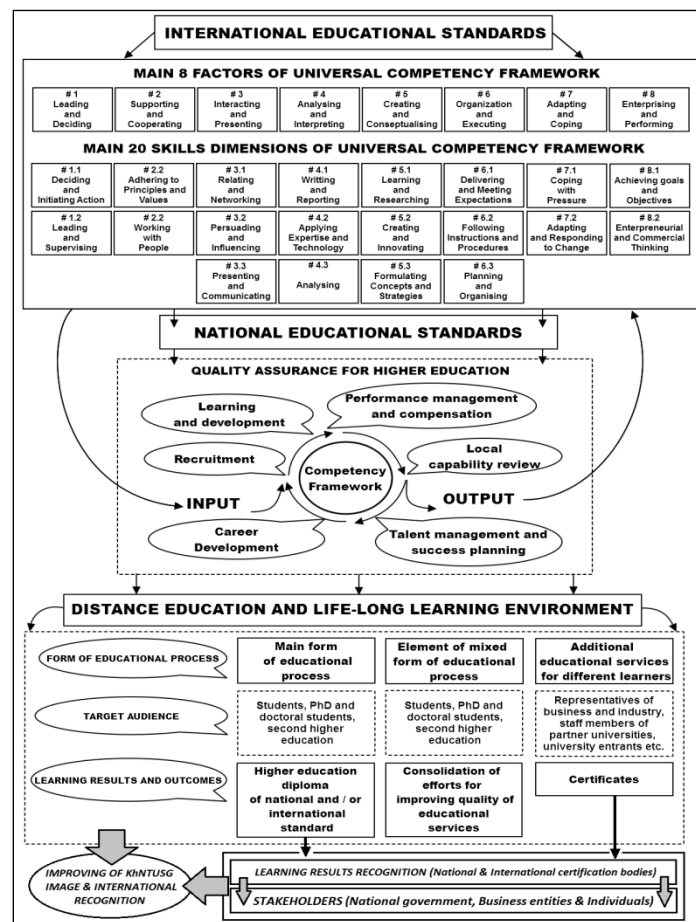


Figure 2. Digitalization of educational services and products in light of global economy trends [11].

Discussing current trends of global economy we must underline that Ukraine together with other UN member states are involved into global process of sustainable development, that states Decree of Ukrainian President “Sustainable Development Goals for Ukraine until 2030” from 30 September, 2019, our society has faced with issue of transition from traditional (linear) to qualitatively new economic model focused on of natural resources conservation (see figure 3), development of innovative industries and overcoming negative effects of global recession [5, pp. 35-37]. Implementation of circular economy principles should transform traditional socio-economic institutions into innovative ones on national and regional levels taking into consideration achievements of European colleagues (see figure 3) [7, pp. 74-76].

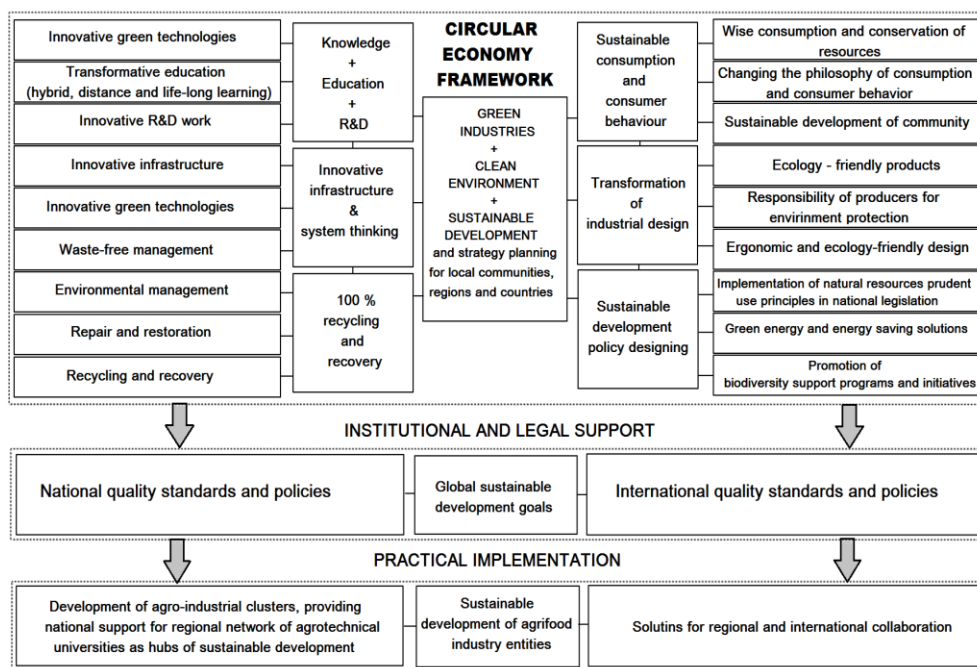


Figure 3. Circular economy: regional agrotechnical universities as hubs of sustainable development

According to scientists, the most optimal model in this context for Ukraine is the so-called "circular economy" - a holistic concept that rapidly and confidently positions itself as an optimal alternative to the classical linear economic model, which is based on destructive to the environment and society philosophy of irresponsible consumption of limited natural resources [7, pp. 5-9]. The main purpose of circular economy principles implementation is to modernize production for minimizing the use of limited natural resources and derivatives of non-recyclable waste that pose an environmental hazard. Represented economic model assumes that industrial waste becomes a source of value added, because conscious transition to environmentally friendly technologies and modernization of existing production facilities on their basis contributes not only to the development of environmental culture, but also to achieve sustainable development goals by socio-economic systems on national and global levels in general.

### 3. Solutions for social inclusion and designing of individual learning trajectories

Earlier we have noted [3] that political, societal and economic drifts on global or regional level usually initiate inevitable macroeconomic effects and changes on labor market and in other sectors of national economic system. That is why Ukraine has essential need in logic-based reforms to stabilize its economy. In the same time each project of national reform like decision-making process in organization must have standard mechanisms and analytical instruments to manage risks or practical implementation of risk-based thinking and social inclusion principles.

Social inclusion is defined by World Bank as: "...process of improving the terms on which individuals and groups take part in society—improving the ability, opportunity, and dignity of those disadvantaged on the basis of their identity" [8]. Discussing economic sense of social inclusion, we should consider that exclusion of disadvantaged social groups can be very costly.

Usually on microeconomic level among high impact risks are: loss of wages, minimizing of life-long earnings, low educational level and employment outcomes. Also on national level social exclusion forms fruitful background for annual losses in gross domestic product rate and degradation of human capital in general. Exclusion or its perception can be cause certain groups to opt out of markets, services, and participation into sociocultural space, with costs to both individuals and economy.

Nowadays social inclusion becomes vital element in achieving the World Bank Group's twin goals of ending extreme poverty and boosting shared prosperity. The World Bank's Environmental and Social Framework (ESF), which applies to all investment projects financing, emphasizes that social inclusion is critical for all of the World Bank's development interventions and for achieving sustainable development. Inclusion is also a priority in the global recovery from the COVID-19 pandemic [4]. Experts of World Bank argues that: "... stimulus packages for the COVID-19 recovery will need to be designed to counterbalance the widening social gaps and will have to guard against creating new forms of exclusion. The crisis is also an opportunity to focus on the rebuilding more inclusive systems that allow society as a whole to be more resilient to future shocks, whether health, climate, natural disasters, or social unrest" [8].

Further discussion of social inclusion concerning current Ukrainian reality is close related with negative in demographic and economic sense impact of military conflict in the East of Ukraine that has caused prolonged socioeconomic collapse of while region. Many of the forced refugees and displaced persons from conflict zone together with civilians who received injuries from firearms, ATO veterans and other socially vulnerable groups have now extremely need in human rights advocacy and socioeconomic support from Ukrainian government. Decentralization and land market reforms together with discussed earlier factors require new approaches to social inclusion as a complex system of circular economy model (see figure 4).

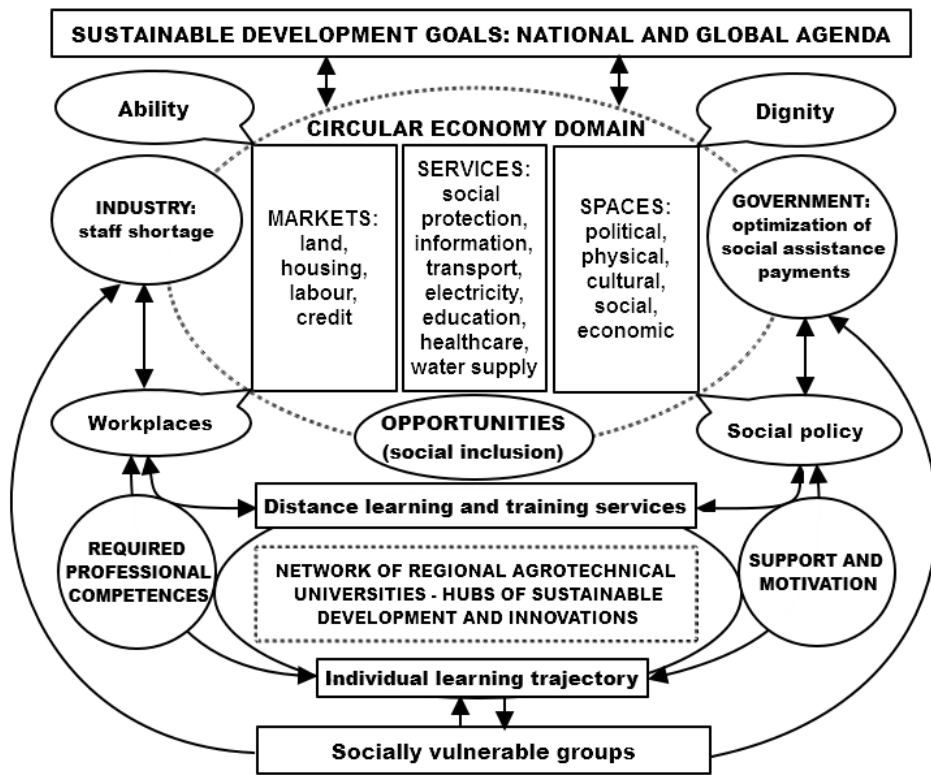


Figure 4. Circular economy: distance learning and training services

Analyzing preconditions of current crisis situation in Ukrainian Agrifood industry, international experts [10] demarks its main controversial aspects and risk zones as: law issues (contradictions between national and international law norms), human recourses (HR management, lifelong education and trainings of required digital skills and relevant professional competences), incorporated elements of shadow economy in agrarian sector (import-export issues), quality management and green economy strategies implementation to foster regional and/or local development, implementation of ecology-friendly technologies and innovations. Most of mentioned above factors are originated from national stereotype that each required innovation or societal reform is a high risk of inevitable changes. Such attitude affects positive effects of reforms in Agrifood sector as well as development of export potential of industry in general [3].

Digital technologies and distance learning opportunities have opened new perspectives for agricultural extension that allow for farmers to clarify their own goals and possibilities, improve their decision-making skills to accelerate desirable scope of agricultural development by transferring to farmers better global experience approved by successfully realized R&D projects on local or regional levels. Described circular economy principles can bring new challenges and risks for farmers and more opportunities for agribusiness entities in relation to practical implementation of innovative technologies into production.

Even nowadays in many countries Agrifood industry stays in a process of rapid change and thus highly stressed due to growing demand on quality and safety food, changing conditions of international competition, low labor productivity and insufficient level of technical support for relevant R&D activity. Also employment opportunities and governmental support for Agrifood industry entities are still perceives stagnation phase. Therefore current changes have many implications for Agrifood industry development and extension: agriculture and farming, informational technologies and national governments are faced with socio-economic, political, and technical changes that inevitably reshaping institutional landscape of its extension. Here as main triggers work world-wide public policy trends: privatization, revitalization and decentralization. This trinity underpins core and fundamental part of extension potential for Agrifood industry segments in many countries.

#### 4. Conclusions and perspectives for further discussion

According to our common opinion, future development of Agrifood industry depends on ability of Agrifood industry entities to prevent and mitigate risks that have different nature and origin by analytical apparatus of Quality management and based on it validated models implemented into national reforms focused on gaining sustainable development goals.

Considering changes and challenges in extension of this industry today we can underline that national governments and representatives of business circles should to contribute their resources into development of required infrastructure for Agrifood industry and staff training by helping villagers to become more aware of changes in their environment. Key role in mentioned above extension of Agrifood industry must play regional agrotechnical universities as hubs of innovations and sustainable development together with international network of partner institutions and business entities joined into regional, national and transnational so-called neural networks aimed on gaining sustainable development goals and social inclusion for prosperity of all mankind.

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