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HOUSEHOLDS ROLE IN THE CIRCULAR ECONOMY

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РОЛЬ ДОМАШНІХ ГОСПОДАРСТВ У ЦИРКУЛЯРНІЙ ЕКОНОМІЦІ

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РОЛЬ ДОМАШНИХ ХОЗЯЙСТВ В ЦИРКУЛЯРНОЙ ЭКОНОМИКЕ

The world economy is at the start of the next phase transition, which essence is that most of the goods are subjected to recycling, that in particular will allow both to produce and save more energy. Linear approach to economic development is inferior to the circular economy, a powerful driver of which may be households. The circular economy envisages rational use of the natural and technical resources, maximum possible energy saving, repair instead of recycling and buying the new one, lease instead of ownership, waste recycling and obtaining new types of raw materials and energy from them. A modern household can become a powerful driver for a circular economy emergence in the future, thanks to a certain potential for self-sustainability and development. Basic principles of households behavior in the circular economy are singled out and the areas of their functioning are described, characteristics of the sustainable development goals are presented in the terms of their implementation for households.

Key words: waste; household; savings; green economy; resources; consumption; sustainable development; circular economy; sharing economy.

Tabl.: 1. Bibl.: 8.

Світова економіка знаходиться на старті чергового фазового переходу, суть якого полягає у тому, що більшість товарів підпадає під вторинну переробку, що зокрема дозволить як виробляти, так й економити більшу кількість енергії. Лінійний підхід до розвитку економіки поступається циркулярній економіці, потужним драйвером якої можуть стати домашні господарства. Циркулярна економіка передбачає раціональне використання природних та технічних ресурсів, максимально можливе енергозбереження, ремонт замість утилізації та купівлі нового, оренда замість права власності, вторинна переробка відходів та отримання з них нових видів сировини, енергії. Сучасне домашнє господарство може стати потужним драйвером становлення циркулярної економіки в майбутньому завдяки певному потенціалу для самозабезпечення та розвитку. Виділено базові принципи поведінки домашніх господарств у циркулярній економіці та охарактеризовано сфери їх функціонування, надано характеристику Цілей сталого розвитку стосовно реалізації їх для домашніх господарств.

Ключові слова: відходи; домашнє господарство; заощадження; зелена економіка; ресурси; споживання, сталій розвиток; циркулярна економіка; шерінгова економіка.

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Мировая экономика находится на старте очередного фазового перехода, суть которого заключается в том, что большинство товаров подпадает под вторичную переработку, что в частности позволит как производить так и экономить большее количество энергии. Линейный подход к развитию экономики уступает циркулярной экономике, мощным драйвером которой могут стать домашние хозяйства. Циркулярная экономика предполагает рациональное использование природных и технических ресурсов, максимально возможное энергосбережение, ремонт вместо утилизации и покупки нового, аренда вместо права собственности, вторичную переработку отходов и получение новых видов сырья, энергии. Современное домашнее хозяйство может стать мощным драйвером становления циркулярной экономики в будущем, благодаря определенному потенциалу для самообеспечения и развития. Выделены базовые принципы поведения домашних хозяйств в циркулярной экономике и охарактеризованы сферы их функционирования, дана характеристика Целей устойчивого развития с точки зрения реализации их для домашних хозяйств.

Ключевые слова: отходы; домашнее хозяйство; сбережения; зеленая экономика; ресурсы; потребление; устойчивое развитие; циркулярная экономика; шеринговая экономика.

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Target setting. Today, the world faces the problem of the resources constraints and the need for their restoration. Annual consumption of households increases, which leads to an automatic increase in the resources use, at the same time, alongside with industrial ones, the volumes of household waste from the household sector are increasing, which carries both the environmental and financial-economic threats.

The world economy is at the start of the next phase transition, which essence is that most of the goods are subjected to recycling, which in particular will allow both to produce and save more energy.

Therefore, a linear approach to economic development that contains the traditional stages – extraction, production, use, utilization, is inferior to the circular economy, which powerful driver can be households.

Unfortunately, poverty remains higher than in the pre-crisis period, economic growth is not enough to raise the living standards, and the growth of the resource prices leads to the fact that a significant funds proportion is spent on current consumption. In turn, a circular approach to the economic activity can reduce the resources consumption without reducing the quality of life and received services and provide new opportunities for development on the basis of sustainability.

Actual scientific research and issues analysis. Modern scientific research in the field of household behavior is a sphere of the scientific interests of many foreign and domestic authors. So much progress has been made in the development of consumption and savings issues by E. Engel, J. Keynes, A. Marshall, M. Friedman and others.

A number of the Ukrainian scientists, in particular I. Bondar, I. Kychko, L. Klyuchnyk, O. Laktionova, A. Melnyk, M. Tarasyuk were engaged in the study of the certain aspects of households functioning, their role and functions in the system of the national economy.

Introduction of the circular economy model by focusing on energy saving, recycling, environmentally friendly production and consumption is explored in the works of I. Zvarych, L. Melnyk, Yu. Orlovska, Ye. Khlobystov and others.

Modern science offers a wide range of products in the households economy, their functional features, subjects behavior by making decisions about consumption and savings. However, there are currently no studies on the role of households in the development of the circular economy.

Uninvestigated parts of general issue defining. Given the special relevance of the issues, related to the society development on the principles of sustainability and a reference point for the Goals of sustainable development [1], defined vectors of sustainable development of Ukraine and its regions [2], there is a need to study the role of the individual subjects of the national economy, in particular, households by the circular economy establishment.

Purpose of the article. The main purpose of the work is to justify the role of households in the circular economy establishment and development in Ukraine.

Statement of the main material. Contemporary concepts of social development, in particular the concept of post-industrial society, information society, post-economic and post-modernist concepts are formed on the base of the social transformations that have radically changed the world. Namely, logics of the social progress and perspectives of the society development are presented in the created concepts.

Formation of the world technological processes, from the first to the sixth, is connected with the industrial revolutions, which brought the basic innovations into all spheres of human activity.

Thus, the first industrial revolution, which thanks to basic innovations, in particular steam and water engines, made it possible to transfer from manual to machine labor, thereby reducing labor costs, whose supplier is the household sector.

The second industrial revolution and its innovations are related to the use of electric current, gave impetus to the development of automotive, electrical engineering, chemical industry and certainly influenced the development of households in terms of comfortable living.

The third industrial revolution – this is the era of computers and information technology, which allowed a new approach to the use of manpower, namely rational use due to labor costs reduction, work at a distance, etc.

However, each stage of development and new produced achievements, at the same time, a large amount of expended resources and waste from production and consumption, therefore, the new trend, the basis of the fourth industrial revolution is the circular economy, which provides for the rational use of the natural and technical resources, maximum possible energy saving, repair instead of recycling and buying new, lease instead of ownership, waste recycling and obtaining new types of raw materials and energy from them.

Modern household can become a powerful driver of the circular economy emergence in the future, i.e., it has a certain potential for self-sustainability and development (Table 1).

Table 1

*Characteristics of the household sector in Ukraine **

Indicators	2010	2011	2012	2013	2014*	2015*	2016*
Average cost per month per household, UAH	3073,3	3458,0	3592,1	3820,3	4048,9	4952,0	5720,4
Structure of the total household expenses, %							
total consumer costs	89,9	90,1	90,8	90,2	91,6	92,9	93,2
food and non-alcoholic beverages	51,6	51,3	50,1	50,1	51,9	53,1	49,8
alcoholic beverages, tobacco products	3,4	3,4	3,5	3,5	3,4	3,3	2,9
non-food products and services	34,9	35,4	37,2	36,6	36,3	36,5	40,5
Average resources per month per one household, UAH	3481,0	3853,9	4144,5	4470,5	4563,3	5231,7	6238,8
Structure of the total household resources, %							
cash income	89,1	88,9	91,0	90,8	91,2	89,4	86,0
- labor payment	47,6	48,9	50,8	50,6	48,8	47,2	46,7
- income from entrepreneurship and self-management	6,1	4,6	4,1	4,1	5,2	5,5	5,2
- income from agricultural products sale	3,4	3,1	2,8	2,8	3,2	3,4	2,9
- pensions, scholarships, social assistance provided in cash	25,8	25,5	27,1	27,1	27,0	25,2	23,1
- cash assistance from relatives, other persons and other cash income	6,2	6,8	6,2	6,2	7,0	8,1	8,1
Cost of the consumed products received from personal auxiliary farms	5,0	4,8	3,8	3,9	4,6	5,1	4,8
Benefits and subsidies for non-cash payments for housing and communal services, electricity, and fuel	0,6	0,6	0,6	0,4	0,4	1,3	4,7
Non-cash benefits to pay for goods and services	0,5	0,5	0,5	0,5	0,4	0,4	0,4
Other receipts	4,8	5,2	4,1	4,4	3,4	3,8	4,1

* Based on data from the State Statistics Service of Ukraine without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol)

From the given data it can be stated, that a potential of the circular economy is concentrated alongside with the entrepreneurship sector. There is a constant increase in the aggregate household resources – from 3481 UAH in 2010 up to 6238.8 UAH for one household in 2016. Also, in 2016, the consumer aggregate expenditures amounted to 93.2 % and they tend to increase.

Consumption, in its turn, generates accumulation of waste, which is produced in Ukraine in amount of 11-13 million tons each year, and per year per capita 300 kg of accumulated waste are accounted, they are more prevalent in cities than in rural areas. An increase in the amount of waste affects the increase in the living standards of the population, however, the level of waste processing in Ukraine is 3-8 %, for comparison in the EU countries – 60 %. At the level of households in small cities, according to some expert estimates, it is possible to achieve a recycling level up to 22 % thanks to a separate collection, mixed flow processing. This, in turn, will allow us to partially solve the problem of environmentally safe waste disposal, which are not suitable for processing and reclamation of MSW landfills that have exhausted their resource.

In November 2016, The Paris Climatic Agreement entered into force, which defined a new framework for the world development, and as one of the trends of the world development in 2016, the concept of the circular economy was recognized, which suggests that waste can be recycled again, and rubbish is considered as a resource for some new goods production. The European Parliament proposed to achieve the level of recycled waste utilization up to 70 % and implement the Road Map of resource-saving Europe, there are all grounds for this purpose, i.e. the level of the circular economy in the EU countries is esti-

mated at 570 million euro annually. We believe that the behavior of households in the circular economy should be based on the following principles:

- one-time use should be made multiple-time use;
- not to buy goods, but services for their use;
- waste should become a resource;
- separate collection of rubbish;
- using new ways to generate the revenue;
- economic growth without increasing current consuming.

Main areas in which households can realize themselves from the point of view of the circular economy concept is consumption, production, waste management. However, in order to consume “green” purchases, produce environmentally friendly products and use eco-design, recycle the product, households need to be supported by this development at all levels.

The circular economy develops in unison with the Goals of sustainable development [1], in particular poverty alleviation, which envisages conditions creation for financial capacity growth of households and expansion of their opportunities for the development.

Fighting famine as a goal of sustainable development can be partly achieved by households themselves, which are engaged in self-maintenance, lead a personal subsidiary economy, thereby partially utilizing waste, which will contribute to the ecosystems conservation and land quality improvement through organic cultivation use.

Goal achievement of good health and well-being depends not only on official institutions, but also, of course, on behalf of households through a healthy lifestyle, preventive examinations, sports. Similarly, high-quality education serves the interests and needs of households and allows for the realization of human potential for development.

Achievement of the goal of clean water and proper sanitary conditions providing to a large extent depends on the household subjects. Unfortunately, today households increasingly serve as water contaminants through disposals of household and sewage waste.

Part of households today have become energy producers out of the alternative sources, that is, they are actively involved in achieving the goal of sustainable development - available and clean energy. By creating conditions in the country for the growth of energy production and its reliable supply to the consumers, increasing energy production and use out of the renewable sources and implementing the measures on energy saving and energy efficiency of all sectors of the economy, using “green” tariff, the goal of the circular economy can be as well achieved. That is, in the circular economy, raw materials are recycled on the basis of the energy renewable and alternative sources and do not have a negative impact on the ecosystems.

Everyone wants decent work and economic growth. It is the circular economy that can provide incentives for economic growth without increasing consumption, development of labor-intensive sectors, growth of labor productivity, open creative working places, promote productive employment, provide reliable and safe working conditions.

Achieving the goals concerning industry, innovation and infrastructure development will enable households to become equal participants in the circular economy. Thus, recovery of the banking system should become the main source of the available financial resources, development of modern, reliable and affordable infrastructure is a prerequisite for increasing the efficiency of business and quality of life of the population, and creation of the incentives system to improve the resources use, wider use of clean and environmentally sound technologies will allow for the implementation of the circular economy principles.

Also, the circular economy allows to save the resources and achieve sustainable development goals - reduction of inequality through solving the problems of social dialogue development as a guarantee of justice of the social and labor relations, fundamental changes in income policy, increasing the role of wages and income received by households, programs introduction to create an accessible environment for full-fledged participation of people with special needs in economic and social life.

Households form the foundations of sustainable development of cities and communities, especially in conditions of power decentralization. So today, for many cities, especially the small ones, the problem of solid household waste management is relevant. From year to year, consumption grows and there is uncontrolled increases in waste that can be recycled. Therefore, the main tasks for achieving the goal of community development is the development of settlements and territories solely on the basis of integrated and sustainable planning (based on the masterplan) and management on the principles of sustainable development, while preserving existing and identifying new cultural and natural heritage sites, minimizing negative environmental impact on the life and health of the population.

The 12th goal of sustainable development is noteworthy - responsible consumption and production, for which achievement, measures for use of sustainable development models, consumption and production, the model of the circular economy introduction, first of all, by focusing on energy saving, regenerative environmentally friendly production and consumption, optimization of food production chains to minimize losses at all stages of the life cycle, restrictions on use of the hazardous chemicals both in the business and in the household sectors and their exposure to the environment, application of modern technologies and practices on waste management by production and consumption are envisaged.

Development of the circular economy was a response to the climate change and challenges, development goals are designed to mitigate the effects of the climate change, in particular, through introduction of the educational programs for the population at all levels of the formal and informal education.

Achievement of the objectives of the marine resources conservation and restoration of the land ecosystems is aimed at substantially improving the quality of life of the coastal communities on account of sustainable nature management and minimization of pollution of the environment of the Black and Azov seas, conservation, restoration and sustainable use of the terrestrial and inland freshwater ecosystems, including the steppe and wetlands ones, expansion of the forest areas and sustainable use of the forest resources, protection and sustainable use of land, desertification prevention of the territory of the country, conservation and sustainable use of the mountain ecosystems.

Each household subject focuses on the development fairness with the institutions support. Achieving this goal involves solving the tasks that will have an impact on households concerning social justice, inclusive development, guaranteeing and ensuring the rule of law by everyday activities, social cohesion, development of the institutes of civil society, development of various forms of self-organization.

Sustainable development of households in the circular economy is geared towards partnerships with the purpose of sustainable development. Only through approval of the partnership principles of the public and private sector, the government agencies and a civil society, development of a network society, it is possible to achieve the determined benchmarks for sustainable development and the tasks solution concerning households functioning within the circular economy.

One of the segments of the circular economy, where households are represented, is the sharing economy or distribution economy. In recent years, the sharing economy has shown steady growth, hereby actively influencing the traditional companies, drawing their resources into its business models and developing startup projects. Development of the technology and the IT industry helps to appear the services for renting cars, renting houses, household appliances, etc.

The sharing economy is based on the principles of the circular economy – people do not buy new goods, but they increasingly share things and services with each other. That is, the sharing economy allows to realize the surplus resource by selling, renting or exchanging in order to obtain material or social benefits, while the minimum starting capital, a small number of employees – 1-2 are required, very often, there is an opportunity to work without hiring premises. The sharing economy approach is to win for both sides of the deal through rational purchasing and use of the things to the fullest. A well-known example of the sharing economy is a

service that was started as a resource, which makes travel less costly for the car owners and more accessible to the people who want to travel. The service has gained popularity, and the international company Bla Bla Car interested in it, in a few years this company absorbed it.

Today, the sharing economy is a profitable exchange that is monetized in different ways, and the growth rate of the economy of total consumption is 20 % annually, volumes are estimated in billions of dollars. Thanks to the economy of general consumption, there is an agreement between the households representatives, in which there is a surplus resource and in which it does not exist, this approach involves both joint consumption and joint creation.

Development of the circular economy affects economic well-being and produces a number of positive effects that arise as a result of reducing one-time payments for purchase of the durable goods, less payments for rent and rental of the goods, which allows to receive benefits to the low-income groups of the population, and an increase in the efficiency of the resources use in the final calculation leads to a decrease in the prices for goods and services.

However, considering the benefits of the circular economy, one should focus on the reservations and obstacles to declaring it as a dominant area of development. Thus, I. Zvarych [6], among such challenges and threats, highlights:

- the complexity of the system changes promoting;
- economic challenges (the circular economy can be loss-making in the short term);
- imperfect markets (lack of the necessary products and infrastructure, competition, knowledge and / or incentives in the market);
- imperfect regulation (imperfect legislation and/or implementing);
- social factors (lack of knowledge and skills related to the circular economy);
- insufficient sorting of waste;
- difficulties in obtaining appropriate funding.

We believe that a serious obstacle to the development of the circular economy is the outdated thinking and vision of the role of households both concerning the simple consumer goods and the resource providers. Transition to a circular development model is, first of all, a change in landmarks, thoughts and actions both from the households themselves and other market agents and the civil society.

Conclusions and prepositions. The conducted research allowed to make the following conclusions. To achieve the goals of sustainable development, it is necessary to maintain a balance between the objectives of economic growth, socially responsible business, reducing social inequality and ensuring environmental safety.

Decrease in natural resources, climate change, growing consumption of households – problems that can be solved through the introduction of the principles of the circular economy, which includes as well reduction of waste materials. In practical terms, this can only be realized with involvement of other actors of the economy, namely, the state and the business sector.

One of the positive features of the circular economy is its innovative direction, reduction of environmental threats, opportunities for development of the "startup" projects by households. Due to the circular economy development, the society in future will be able to achieve secondary processing of the resources at a level of 70 %. Introducing within the framework of the circular economy the ideas of "the sharing economy" allows to achieve the economic and socio-environmental effects without incurring some additional costs due to the lower lease and rental payments.

Unfortunately, the circular economy will not solve 100 % of the global problems of mankind, but due to its introduction, consumption of resources will decrease, consumption quality of households will change, negative impact on the ecosystem will be decreased, new economic growth will be achieved.

References

1. *Tsili staloho rozvytku: Ukraina. Natsionalna dopovid 2017 [Goals of sustainable development: Ukraine. National report 2017]* Retrieved from http://www.idss.org.ua/monografii/2017_SDGs_NationalReport.pdf.

ТЕОРЕТИЧНІ ПРОБЛЕМИ РОЗВИТКУ НАЦІОНАЛЬНОЇ ЕКОНОМІКИ

2. Libanova, E.M., Khvesyuk, M.A. (2017). *Socialno-ekonomichnyj potencial stalogo rozvytku Ukrainy ta yiyi regioniv: vektory realnogo postupu: nacionalna dopovid [Socio-economic potential of sustainable development of Ukraine and its regions: vectors of real progress: national report]*. Kyiv: DU IEPSSR NAN Ukrainy (in Ukrainian).

3. Derii, Zh.V. (2011). Analiz povedinky domashnix gospodarstv v riznyx typax ekonomichnyx system [Analysis of household behavior in the different types of economic systems]. *Ekonomika domashnix gospodarstv – Household economy*. Kyiv: Korporatsiia, pp. 237–253 (in Ukrainian).

4. Derii, Zh.V., Zosymenko, T.I. (2016). Ekologichna komponenta korporatyvnoyi socialnoyi vidpovidalnosti: svitovij dosvid ta ukrajyns'ki realiyi [Environmental component of corporate social responsibility: world experience and Ukrainian realities]. *Aktualni problemy ekonomiky – Actual problems of the economy*, no. 11, pp. 278–290 (in Ukrainian).

5. Derii, Z.V., Lysenko, I.V., Lysenko, N.V. (2017). Evoliutsiia naukovoï dumky v upravlinni ekolohichnoiu bezpekoiu [Evolution of the scientific thought for the environmental safety management of the state]. *Naukovyi visnyk Polissia – Scientific bulletin Polesie*, no. 3, pp. 38–40 (in English).

6. Zvarych, I. (2016). Globalna cyrkulyarna ekonomika yak zasib pobudovy novogo ekologichno stijkogo suspilstva [The global circular economy is a means of building a new environmentally sustainable society]. *Svit finansiv – World of finance*, no. 4 (49), pp. 148–155 (in Ukrainian).

7. Melnyk, L.G. (2016). «Zelenye» zadachi Tretei promyshlennoi revoliutsii [Green tasks of the third industrial revolution]. *Mekhanizm rehuliuвання ekonomiky – Mechanism of Economic Regulation*, no. 2, pp. 9–24 (in Ukrainian).

8. Orlovska, Yu.V., Yakovyshyna, T.F., Orlovskiy, Ye.S. (2016). Zelene budivnytvo yak skladova polityky YeS shhodo rozvytku cyrkulyarnoyi ekonomiky [Green building as a component of EU policy for the development of the circular economy]. *Skhidna Evropa: ekonomika, biznes ta upravlinnia – Eastern Europe: Economics, Business and Management*, no. 5 (05), pp. 365–371 (in Ukrainian).

References (in language original)

1. Цілі сталого розвитку: Україна. Національна доповідь 2017 [Електронний ресурс]. – Режим доступу : http://www.idss.org.ua/monografii/2017_SDGs_NationalReport.pdf.

2. Соціально-економічний потенціал сталого розвитку України та її регіонів: вектори реального поступу: національна доповідь / за ред. Е. М. Лібанової, М. А. Хвесика. – К. : ДУ ІЕПСР НАН України, 2017. – 864 с.

3. Аналіз поведінки домашніх господарств в різних типах економічних систем / Ж. В. Дерій // Економіка домашніх господарств : колективна монографія. – К. : Корпорація, 2011. – С. 237–253.

4. Дерій Ж. В. Екологічна компонента корпоративної соціальної відповідальності: світовий досвід та українські реалії / Ж. В. Дерій, Т. І. Зосименко // Актуальні проблеми економіки : науковий журнал. – 2016. – № 11. – С. 278–290.

5. Derii Z. V. Evolution of the scientific thought for the environmental safety management of the state / Z. V. Derii, I. V. Lysenko, N. V. Lysenko // Науковий вісник Полісся. – 2017. – № 3 (11), ч. 1. – С. 38–40.

6. Зварич І. Глобальна циркулярна економіка як засіб побудови нового екологічно стійкого суспільства / І. Зварич // Світ фінансів. – 2016. – № 4 (49). – С. 148–155.

7. Мельник Л. Г. «Зелёные» задачи Третьей промышленной революции / Л. Г. Мельник // Механізм регулювання економіки. – 2016. – № 2. – С. 9–24.

8. Орловська Ю. В. Зелене будівництво як складова політики ЄС щодо розвитку циркулярної економіки / Ю. В. Орловська, Т. Ф. Яковишина, Є. С. Орловський // Східна Європа: економіка, бізнес та управління. – 2016. – Вип. 5 (05). – С. 365–371.

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