**TOSHKENT DAVLAT IQTISODIYOT UNIVERSITETI HUZURIDAGI ILMIY DARAJALAR BERUVCHI № DSc.03/30.01.2021.I.16.03. RAQAMLI ILMIY KENGASH**

**TOSHKENT DAVLAT IQTISODIYOT UNIVERSITETI HUZURIDAGI "O'ZBEKISTON IQTISODIYOTINI RIVOJLANTIRISHNING ILMIY ASOSLARI VA MUAMMOLARI" ILMIY-TADQIQOT MARKAZI**

**XAMDAMOV SHOH-JAXON RAXMAT O'G'LI**

# MILLIY IQTISODIYOTDA BARQAROR RIVOJLANISHNI TA'MINLASH METODOLOGIYASINI TAKOMILLASHTIRISH

**08.00.02 – Makroiqtisodiyot**
**08.00.01 – Iqtisodiyot nazariyasi**

**Iqtisodiyot fanlari doktori (DSc) dissertatsiyasi**
**AVTOREFERATI**

**Toshkent — 2025 yil**

**UDK: 330.5.057.7**

# Fan doktori (DSc) dissertatsiyasi avtoreferati mundarijasi
# Оглавление автореферата докторской (DSc) диссертации
# Content of the doctoral (DSc) dissertation abstract

**TOSHKENT DAVLAT IQTISODIYOT UNIVERSITETI HUZURIDAGI ILMIY DARAJALAR BERUVCHI № DSc.03/30.01.2021.I.16.03. RAQAMLI ILMIY KENGASH**

**TOSHKENT DAVLAT IQTISODIYOT UNIVERSITETI HUZURIDAGI "O'ZBEKISTON IQTISODIYOTINI RIVOJLANISHNING ILMIY ASOSLARI VA MUAMMOLARI" ILMIY-TADQIQOT MARKAZI**

**XAMDAMOV SHOH-JAXON RAXMAT O'G'LI**

# MILLIY IQTISODIYOTDA BARQAROR RIVOJLANISHNI TA'MINLASH METODOLOGIYASINI TAKOMILLASHTIRISH

**08.00.02 – Makroiqtisodiyot**
**08.00.01 – Iqtisodiyot nazariyasi**

**Iqtisodiyot fanlari doktori (Doctor of Science)**
**ilmiy darajasini olish uchun tayyorlangan dissertatsiyasi**
**AVTOREFERATI**

**Toshkent — 2025 yil**

**Fan doktori (DSc) dissertatsiyasi Oliy attestatsiya komissiyasida B2025.1.DSc/Iqt523 raqam bilan ro'yxatga olingan.**

Dissertatsiya Toshkent davlat iqtisodiyot universiteti qoshidagi "O'zbekiston iqtisodiyotini rivojlantirishning ilmiy asoslari va muammolari" ilmiy-tadqiqot markazida bajarilgan.

Dissertatsiya avtoreferati uch tilda (o'zbek, rus, ingliz(rezyume) Ilmiy kengash veb-sahifasida (www.tsue.uz) va "Ziyonet" axborot-ta'lim portalida (www.ziyonet.uz) joylashtiriladi.

| | |
|---|---|
| **Ilmiy maslahatchi:** | **Usmanov Anvar Saidmaxmudovich**<br>iqtisodiyot fanlari doktori, professor |
| **Rasmiy opponentlar:** | **Abdurahmonov Qalandar Xodjaevich**<br>akademik, iqtisodiyot fanlari doktori, professor |
| | **Nasirxodjayeva Dilafruz Sabitxanovna**<br>iqtisodiyot fanlari doktori, professor |
| | **Mustafakulov Sherzod Igamberdiyevich**<br>iqtisodiyot fanlari doktori, professor |
| **Yetakchi tashkilot:** | **Samarqand davlat universiteti** |

Dissertatsiya himoyasi Toshkent davlat iqtisodiyot universiteti huzuridagi ilmiy darajalar beruvchi DSc.03/30.01.2021.I.16.03 raqamli Ilmiy kengashning 2025-yil "19" 08 kuni soat 10:00 dagi majlisida bo'lib o'tadi. Manzil: 100066, Toshkent shahri, Islom Karimov ko'chasi, 49-uy. Tel.: (99871) 239-28-72; faks: (99871) 239-43-51; e-mail: info@tsue.uz

Dissertatsiya bilan Toshkent davlat iqtisodiyot universitetining Axborot-resurs markazida tanishish mumkin (1717 raqami bilan ro'yxatga olingan). Manzil: 100066, Toshkent shahri, Islom Karimov ko'chasi, 49-uy. Tel.: (99871) 239-28-72; faks: (99871) 239-43-51.

Dissertatsiya avtoreferati 2025-yil "04" avgust da tarqatildi.

(2025-yil "04" 08 dagi 80 raqamli reyestr bayonnomasi)

**S.K. Xudoyqulov**
Ilmiy darajalar beruvchi ilmiy kengash raisi, i.f.d., professor

**B.E. Mamaraximov**
Ilmiy darajalar beruvchi ilmiy kengash ilmiy kotibi, i.f.n., professor

**U.V. Gafurov**
Ilmiy darajalar beruvchi ilmiy kengash qoshidagi ilmiy seminar raisi, i.f.d., professor

## KIRISH (fan doktori (DSc) dissertatsiyasining annotatsiyasi)

**Dissertatsiya mavzusining dolzarbligi va zarurati.** Jahon iqtisodiyotidagi sifat o‘zgarishlari, ayniqsa raqamli va sun’iy intellekt texnologiyalari ustuvorligi sharoitida iqtisodiy o‘sishda ijtimoiy va ekologik barqarorlikni "yashil iqtisodiyot" va "yashil energiya"ga ko‘ra ta’minlash muhim mazmun kasb etmoqda. Jahon bankining ma’lumotlariga ko‘ra “global iqlim o‘zgarishlari hisobiga 2050-yilga borib global yalpi ichki mahsulotning hajmi 3,3% ga kamayishiga sabab bo‘ladi. Yoqilg‘i-energiya karbon emissiyasi 2025-yilda taxminan 39 milliard tonna karbonat angidrid ($GtCO_2$) ajratilishi prognoz qilinmoqda. Milliy darajalarda joriy qilinayotgan yashil energiya manbalari hisobiga keyingi yillarda ular doimiy ravishda kamayib borishi va 2030-yilga kelib 37,4 milliard tonnagacha tushishi kutilmoqda”[1]. Bugungi kunda jahon iqtisodiyotining rivojlanish tendensiyasida milliy iqtisodiyotlarni barqaror rivojlantirishda "yashil iqtisodiyot" va "yashil energiya"ga jadal o‘tish dolzarb muammolardan biri sifatida qaralmoqda.

Jahonda makroiqtisodiy yo‘nalishlarda bajarilayotgan tadqiqotlar tarkibida iqtisodiy, ijtimoiy va ekologik barqarorlikni uyg‘un holda ta’minlashga bag‘ishlangan loyihalar ustuvor darajada bajarilmoqda. Bu borada, jumladan quyidagi mavzulardagi tadqiqotlar muhim ahamiyat kasb etmoqda: "yashil iqtisodiyot" va "yashil energiya"ga jadal o‘tishning samarali mexanizmlarini ishlab chiqish (takomillashtirish); global ekologik tahdidlar, tengsizlik va qashshoqlik kabi ijtimoiy muammolarni hisobga olgan holda ijtimoiy-iqtisodiy rivojlanish, makroiqtisodiy barqarorlikni ta’minlashning uslubiy asoslarini takomillashtirish zarurligini taqozo etmoqda.

Yangi O‘zbekistonni barpo etish bo‘yicha amalga oshirilayotgan islohotlarning mohiyati aholining munosib turmush sifatini ta’minlashga qaratilgan bo‘lib, bu borada ijtimoiy, iqtisodiy va ekologik barqarorlikni uyg‘un ta’minlash muhim ahamiyat kasb etmoqda. “...Barcha joylarda aholining kam ta’minlanganlik darajasini pasaytirish, sog‘lom turmush tarzini ta’minlash va barcha yoshdagi kishilarning farovonligiga ko‘maklashish, gender tenglikni ta’minlash, arzon, ishonchli, barqaror va zamonaviy energiya manbalaridan barcha uchun umumfoydalanish imkoniyatini ta’minlash, barqaror infratuzilmani yaratish, iqlim o‘zgarishi va uning oqibatlariga qarshi kurash bo‘yicha tezkor choralarni qabul qilish”[2] kabi vazifalar belgilab berilgan. Mazkur vazifalar ijrosini ta’minlashda milliy iqtisodiyotni barqaror rivojlantirish bo‘yicha amaliy ahamiyatga molik muammolar tadqiqi bilan bir qatorda uning ilmiy-nazariy va metodologik-uslubiy asoslarini takomillashtirishga yo‘naltirilgan tadqiqotlar ko‘lamini kengaytirish maqsadga muvofiq.

O‘zbekiston Respublikasi Prezidentining 2023-yil 11-sentyabrdagi PF-158-son "O‘zbekiston — 2030 Strategiyasi to‘g‘risida", 2022-yil 28-yanvardagi PF-60-son "2022-2026-yillarga mo‘ljallangan Yangi O‘zbekistonning taraqqiyot

[1]https://www.statista.com/statistics/1385434/

[2] O‘zbekiston Respublikasi Vazirlar Mahkamasining “2030-yilgacha bo‘lgan davrda barqaror rivojlanish sohasidagi milliy maqsad va vazifalarni amalga oshirishni jadallashtirish bo‘yicha qo‘shimcha chora-tadbirlar” to‘g‘risida 21.02.2022-yildagi 83-son qarori.

strategiyasi to‘g‘risida"gi farmonlari, 2019-yil 4-dekabrdagi PQ-4477-son “2019-2030-yillar davrida O‘zbekiston Respub-likasining Yashil iqtisodiyotga o‘tish strategiyasini tasdiqlash to‘g‘risida”gi qarori, Vazirlar Mahkamasining 21.02.2022-yil 21-fevraldagi 83-son “2030-yilgacha bo‘lgan davrda barqaror rivojlanish sohasidagi milliy maqsad va vazifalarni amalga oshirishni jadallashtirish bo‘yicha qo‘shimcha chora-tadbirlar to‘g‘risida”gi qarori hamda ushbu sohaga oid boshqa me’yoriy hujjatlarda belgilangan vazifalarni amalga oshirishda mazkur dissertatsion tadqiqot muayyan darajada xizmat qiladi.

**Tadqiqotning respublika fan va texnologiyalari rivojlanishining ustuvor yo‘nalishlariga mosligi.** Mazkur tadqiqot respublika fan va texnologiyalari rivojlanishining I. “Demokratik-huquqiy jamiyatni ma’naviy-axloqiy va madaniy rivojlantirish, innovatsion iqtisodiyotni shakllantirish” ustuvor yo‘nalishiga muvofiq amalga oshirilgan.

**Dissertatsiya mavzusi bo‘yicha xorijiy ilmiy tadqiqotlar sharhi[3].**

Milliy iqtisodiyotda barqaror rivojlanishni ta’minlashni muvofiqlashtirish bo‘yicha ilmiy izlanishlar jahonning yetakchi oliy ta’lim tashkilotlari, ilmiy markazlari va global tashkilotlari jumladan, United Nations Sustainable Development Group, World bank, United Nations Development Programme, United Nations Environment Programme, International Institute for Environment and Development (Buyuk Britaniya), Stockholm Environment Institute (Shvetsiya), The Earth Institute – Columbia University (AQSH), The World Resources Institute (AQSH), The International Union for Conservation of Nature (Shveytsariya), The Global Green Growth Institute (Janubiy Koreya), The Climate Group (Buyuk Britaniya), The International Renewable Energy Agency (BAA), The Intergovernmental Panel on Climate Change (Shvetsariy), The International Institute for Sustainable Development (Kanada), The Global Footprint Network (Italiya), The Center for International Forestry Research (Indoneziya), The Potsdam Institute for Climate Impact Research (Germaniya), The Basque Centre for Climate Change (Ispaniya), The European Environment Agency (Daniya), Massachusetts Institute of Technology (AQSH), University of California (AQSH), Harvard University (AQSH), Oxford University (Buyuk Britaniya), Cambridge University (Buyuk Britaniya), ETH Zurich — Institute of Environmental Engineering (Shveytsariya), Lund University (Shvetsiya), Technical University of Munich (Germaniya), Delft University of Technology (Niderlandiya), National University of Singapore (Singapur), University of Tokyo (Yaponiya), Beijing Tsinghua University (Xitoy), University of Melbourne (Avstraliya), University of Cape Town — African Climate & Development Initiative (Janubiy Afrika), McGill University (Kanada), University of Sydney (Avstraliya), Moskovskiy gosudarstvennыy universitet (Rossiya), Moskovskiy energeticheskiy institut

[3] Dissertatsiya mavzusi bo‘yicha xorijiy adabiyotlar sharhi, sciencedirect.com, scopus,com, unsdg.un.org, worldbank.org, undp.org, unep.org, iied.org, sei.org, earth.columbia.edu, wri.org, iucn.org, gggi.org, theclimategroup.org, irena.org, ipcc.ch, iisd.org, footprintnetwork.org, cifor.org, pik-potsdam.de, bc3research.org, eea.europa.eu, mit.edu, berkeley.edu, harvard.edu, ox.ac.uk, cam.ac.uk, env.ethz.ch, lu.se, tum.de, tudelft.nl, nus.edu.sg, u-tokyo.ac.jp, tsinghua.edu.cn, unimelb.edu.au, climate.uct.ac.za, mcgill.ca, sydney.edu.au, msu.ru, mpei.ru, iqtisodiyot.uz, nuu.uz, ecology.uz, tsue.uz va boshqa manbalar asosida tayyorlangan.

(Rossiya), O‘zbekiston Respublikasi Vazirlar mahkamasi huzuridagi Makroiqtisodiy va hududiy tadqiqotlar instituti, O‘zbekiston Milliy universiteti, O‘zbekiston Ekologiya va Atrof-Muhitni Muhofaza Qilish Milliy ilmiy-tadqiqot instituti va Toshkent davlat iqtisodiyot universiteti tomonidan amalga oshirilib kelmoqda.

Jahonda iqtisodiyotni barqaror rivojlantirish metodologiyasini takomillashtirish va uslubiy-amaliy jihatlarini rivojlantirish bo‘yicha amalga oshirilgan tadqiqotlar bo‘yicha, jumladan quyidagi ilmiy natijalar olingan: barqaror rivojlanishni ta’minlashning ilmiy-uslubiy, tashkiliy-iqtisodiy, institutsional, jumladan iqlim o‘zgarishi va $Co_2$ni kamaytirish bo‘yicha uslubiy tavsiyalar ishlab chiqilgan (Intergovernmental Panel on Climate Change); tabiiy resurslardan samarali foydalanish va yashil iqtisodiyotni rivojlantirishning uslubiy masalalari asoslangan (World Resources Institute); qayta tiklanuvchi energiya manbalarini keng joriy etish va energiya samaradorligini oshirish bo‘yicha ilmiy-amaliy takliflar tayyorlangan (International Renewable Energy Agency); atrof-muhitni muhofaza qilish va ekologik barqarorlikni ta’minlashning uslubiy asoslarini yashil iqtisodiyotga ko‘ra tashkil etish bo‘yicha tavsiyalar ishlab chiqilgan takomillashtirish bo‘yicha takliflar asoslangan (United Nations Environment Programme); global iqlim siyosatini shakllantirish va milliy darajadagi moslashuv samarali choralar bo‘yicha takliflar ishlab chiqilgan (Potsdam Institute for Climate Impact Research); uglerod chiqindilarini kamaytirish va shaharlarni ekologik jihatdan barqaror rivojlantirish bo‘yicha uslubiy-amaliy tavsiyalar asoslangan (Stockholm Environment Institute); suv resurslarini boshqarish va suv ta’minoti barqarorligini ta’minlashda trans chegaraviy masalalar yuzasidan tavsiyalar ishlab chiqilgan (The Global Green Growth Institute); bioxilmaxillikni saqlash va ekotizim xizmatlarini baholash uslubiyoti takomillashtirilgan (The International Union for Conservation of Nature); barqaror iqtisodiy o‘sish va kambag‘allikni qisqartirish, fiskal-monetar siyosatning o‘zaro ta’siriga ko‘ra makroiqtisodiy barqarorlikni ta’minlash, yashil iqtisodiyotga o‘tish va resurslardan samarali foydalanish bo‘yicha ilmiy-amaliy tavsiyalar asoslangan (Makroiqtisodiy va hududiy tadqiqotlar instituti, O‘zbekiston).

Jahon iqtisodiyoti va milliy iqtisodiyotlarni barqaror rivojlantirishning ilmiy-nazariy va amaliy yo‘nalishlari bo‘yicha olib borilayotgan tadqiqotlarda, jumladan quyidagi ilmiy izlanishlar ustuvor ahamiyat kasb etmoqda: raqamli va sun’iy intellekt texnologiyalari jadal rivojlanishi sharoitida bandlik va makro iqtisodiy barqarorlikning uslubiy asoslarini takomillashtirish bilan bog‘liq tadqiqotlar keng ko‘lamda olib borilmoqda.

**Muammoning o‘rganilganlik darajasi.** Barqaror rivojlanish masalalari doimo xorijiy olimlar tomonidan ilmiy izlanishlar diqqat markazida bo‘lgan[4].

[4] Brundtland G. H. Gro Harlem Brundtland. – Reino unido: Oxford University Press, 1987.; Daly H. E. Ecological economics and sustainable development, selected essays of Herman Daly //Ecological Economics and Sustainable Development, Selected Essays of Herman Daly. – Edward Elgar Publishing, 2007.; Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. Science, 325(5939), 419-422.; Giovanardi, M., Konstantinou, T., Pollo, R., & Klein, T. Internet of Things for building façade traceability: A theoretical framework

Jumladan, G. H.Brundtland, M. Giovanardi, T. Konstantinou, R. Pollo, T. Klein, R.G. Klapper, A. Fayolle, N. Sumarsono, R. Kasali, T.E. Balqiah, M. Al-Emran, A. Babkin, E. Shkarupeta, L. Tashenova, E. Malevskaia-Malevich, T. Shchegoleva, S. Li, J. Ma, F. Xu, L. Wei, D. He, E. Cagno, M. Negri, A. Neri, M. Giambone, B. Kump, J. Wang, L. Qiao, G. Zhu, K. Di, X. Zhang, S. Han, H. Ramkissoon, E. You, M. Kim. kabi xorijlik olimlar mazkur sohada ilmiy tadqiqot ishlarini amalga oshirganlar. Mustaqil davlatlar hamdo‘stligi mamlakatlarida bu borada J.Y. Bakayeva, E.N. Shchegoleva, A.V. Shuvaev, A.P. Sokolov, O.M. Subbotina, I.N. Krakovskaya, G.B. Kleiner, V.G. Rodionov, I.P. Vorobyeva, A.B. Mirsayidov, A.Ch. Sattarov, R.A. Kuliyev singari olimlar[5] ilmiy tadqiqotlar olib borishgan.

O‘zbekistonda milliy iqtisodiyotda barqaror rivojlanishni ta’minlash borasidagi ayrim masalalar Abdurahmonov K., Gulyamov S., Xudoyqulov S.K., Ismatov X., Ulmasov A., Imamov V., Usmanov A.S., Mustafakulov Sh.I., Mahmudov N., Sharifhodjayev M., Shodmonov S., Alimov R.X., Jo‘rayev T.T., Ruzmetov B., Bekmurodov A., Umurzakov B. K., Gafurov U., Juzbayev A.O., Akbarov N. G., Salimov B., Rasulev A.F., Voronin S.A., Mamaraximov B.E., Sultonov D., Maxmudov N.M., Isayev F., Xudoykulov X., Abrorov S.,

---

to enable circular economy through life-cycle information flows. Journal of Cleaner Production, 382, 135261, 2023.; Klapper, R. G., & Fayolle, A. A transformational learning framework for sustainable entrepreneurship education: The power of Paulo Freire's educational model. The International Journal of Management Education, 21(1), 100729, 2023.; Sumarsono, N., Kasali, R., & Balqiah, T. E. Circular business model, technology innovation and performance: A strategic-based theoretical framework in the Indonesian energy transition. Renewable Energy Focus, 45, 259-270, 2023.; Al-Emran, M. Beyond technology acceptance: Development and evaluation of technology-environmental, economic, and social sustainability theory. Technology in Society, 75, 102383, 2023.; Babkin, A., Shkarupeta, E., Tashenova, L., Malevskaia-Malevich, E., & Shchegoleva, T. Framework for assessing the sustainability of ESG performance in industrial cluster ecosystems in a circular economy. Journal of Open Innovation: Technology, Market, and Complexity, 9(2), 100071, 2023.; Li, S., Ma, J., Xu, F., Wei, L., & He, D. Fundamental principles and environmental applications of electrochemical hydrogen peroxide production: A review. Chemical Engineering Journal, 452, 139371, 2023.; Cagno, E., Negri, M., Neri, A., & Giambone, M. One framework to rule them all: an integrated, multi-level and scalable performance measurement framework of sustainability, circular economy and industrial symbiosis. Sustainable Production and Consumption, 35, 55-71, 2023.; Kump, B. Lewin's field theory as a lens for understanding incumbent actors' agency in sustainability transitions. Environmental Innovation and Societal Transitions, 46, 100683, 2023.; Wang, J., Qiao, L., Zhu, G., Di, K., & Zhang, X. Research on the driving factors and impact mechanisms of green new quality productive forces in high-tech retail enterprises under China's Dual Carbon Goals. Journal of Retailing and Consumer Services, 82, 104092, 2025.; Han, S., Ramkissoon, H., You, E., & Kim, M. J. Support of residents for sustainable tourism development in nature-based destinations: Applying theories of social exchange and bottom-up spillover. Journal of Outdoor Recreation and Tourism, 43, 100643, 2023.

[5] Бакаева Ж. Ю., Щеголева Э. Н. Экономика устойчивого развития. – 2009.; Шуваев А. В. Особенности развития устойчивой социально-экономической системы //Проблемы современной экономики (Новосибирск). – 2014. – №. 18. – С. 49-53.; Соколов А. П., Субботина О. М. Концептуальные основы формирования устойчивой региональной политики //Сегодня и завтра Российской экономики. – 2015. – №. 72. – С. 37-43.; Краковская И. Н. Концепция обеспечения устойчивой конкурентоспособности промышленных кластеров России: основные положения //Экономика, предпринимательство и право. – 2023. – №. 2.; Клейнер Г. Б. Системная экономика как платформа развития современной экономической теории //Вопросы экономики. – 2013. – Т. 6. – С. 4-28.; Родионов В. Г. Моделирование устойчивой динамики развития социально-экономических систем глобальной экономики //Менеджмент в России и за рубежом. – 2009. – №. 1. – С. 10-14.; Воробьева И. П. Устойчивость экономики и проблемы ее обеспечения в современной России //Вестник Томского государственного университета. Экономика. – 2012. – №. 1 (17). – С. 17-25.; Мирсаидов А. Б. Тенденция развития торгово-экономических отношений Республики Таджикистан на пространстве СНГ //Науковий вісник Дипломатичної академії України. – 2017. – №. 24 (3). – С. 54-60.; Саттаров А. Ч. Проблемы и перспективы развития экономики Казахстана. – 2018.; Кулиев Р. А. Глобализация мировой экономики и Азербайджан //Баку. – 2011. – Т. 20011. – С. 320.

Akhmediyeva A., Kadirov A., Mamurov B., Musabekov U., Nasirxodjayeva D., Raximova M., Abduraxmanova G.K., Irmatova A.B., Akbarova M.I., Abdullayev S., Xajiyev B., Mambetjanov Q., Xashimova N., Mamatov A., Muradova N., Berkinov B., Do‘schanov T., Ayubdjanov A., Askarova M., Utanov B., Jumayev N.H., Rakhmonov D.A. va boshqa olimlar[6]ning ilmiy izlanishlarida o‘z aksini topgan.

---

[6] Abdurahmonov K. H., Imamov V. Effective use and management of labor potential in Uzbekistan. – T.: 2008.; Saidakhror G. The Impact of Artificial Intelligence on Higher Education and the Economics of Information Technology. International Journal of Law and Policy,2(3), 1-6. – 2024.; Xudoyqulov S., Ismatov X. O‘zbekistonda soliq siyosati strategiyasi va taktik yo’nalishlarini takomillashtirish masalalari. TISU ilmiy tadqiqotlari xabarnomasi, 1(2), 37-46. – 2023.; Улмасов А. Оила иқтисоди // Т.: «Мехнат. – 1998.; Усманов А. С. Способы пропорционального развития экономической системы. Инновационная экономика: перспективы развития и совершенствования, (8 (34)), 342-347. – 2018.; Mustafakulov S. Analysis of available methods of analyzing socio-economic and innovation potential of territories //Nordic_Press. – 2024. – Т. 1. – №. 0001.; Шарифходжаев М. Формирование открытого гражданского общества в Узбекистане. Т.: Издательский дом «Мир экономики и права. – 2002.; Shodmonov S., Alimov R. X., Jo‘rayev T. T. Iqtisodiyot nazariyasi. Toshkent, “Moliya” nashriyoti. – 2002.; Maxmudov N. M. va boshqalar. Iqtisodiy o‘sish modellari. O‘quv qo‘llanma. T.: Ekonomika. – 2016.; Ruzmetov B. et al. Formation of supporting points for production growth based on diversification of the regional industry. E3S Web of Conferences. – EDP Sciences, 2023. – Т. 449. – S. 01001.; Bekmurodov A. The impact of transformation processes on the activity of commercial banks. Web of Synergy: International Interdisciplinary Research Journal, 2(6), 194-197. – 2023.; Umurzakov B. K. State regulation of social partnership relations in small business, 100-102. – 2013.; Gafurov U., Juzbaev A. O., Akbarov N. G. Improving the mechanism for financing activities of small businesses in digital economy: in case of the Republic of Karakalpakstan. In Proceedings of the 6th International Conference on Future Networks & Distributed Systems (pp. 223-230). – 2022.; Salimov B. Dynamics and features of development of small and private entrepreneurship in Uzbekistan. Arxiv nauchnых issledovaniy, (14). – 2020.; Rasulev A. F., Voronin S. A., Mamarakhimov B. E. Reform of State-Owned Enterprises–New Threats and New Opportunities for the Development of Uzbekistan’s Economy. Economy: strategy and practice, 17(3), 195-209. – 2022.; Sultonov D. O‘zbekiston iqtisodiyoti modernizatsiyasi, barqaror iqtisodiyot va jahon mamlakatlari bilan xalqaro hamkorlik masalalari. Nordic_Press, 3(0003). – 2024.; Makhmudov N. M. va boshqalar. Iqtisodiy o‘sish modellari. O‘quv qo‘llanma. T.: Ekonomika. – 2016.; Isayev F. Soliq yukini aniqlash metodikasini takomillashtirish. Iqtisodiyot va ta’lim, (6), 86-91. – 2021.; Khudoykulov K. et al. The role of environmental social and governance in achieving sustainable development goals: evidence from ASEAN countries. Economic research-Ekonomska istraživanja, 36(1), 170-190. – 2023.; Abrorov S. et al. Environmental innovations, energy innovations, governance, and environmental sustainability: Evidence from South and Southeast Asian countries. Resources Policy, 82, 103556. – 2023.; Akhmedieva A., Kadirov A., Mamurov B., Musabekov U. Improving Investment Strategy for the Economic Development of Uzbekistan. Current Dynamics in Business and Economics: Theoretical Approaches and Empirical Discoveries, 245. – 2023.; Nasirxodjaeva D., Raximova M. Toshkent shahri barqaror rivojlanishida yuzaga kelishi mumkin bo‘lgan ekologik muammolar tahlili. "Milliy iqtisodiyotni isloh qilish va barqaror rivojlantirish istiqbollari" respublika ilmiy-amaliy konferensiyasi materiallari to‘plami. – 2023.; Kalandarovna A. G. Effective regulation of employment in small business. American Journal of Science and Technologies, 47. – 2015.; Irmatova A. B., Akbarova M. I. Impact of digital technologies on women’s employment. In International Conference on Next Generation Wired/Wireless Networking (pp. 290-298). Cham: Springer Nature Switzerland. – 2022.; Abdullayev S., Xajiyev B., Mambetjanov Q. O‘zbekistonning ijtimoiy-iqtisodiy rivojlanish strategiyasi. Arxiv nauchnых issledovaniy, (10). – 2020.; Khashimova N., Buranova M. Comparative Analysis of Machine Learning Algorithms for Inflation Rate Classification and Economic Trend Forecasting. In Proceedings of the 7th International Conference on Future Networks and Distributed Systems (pp. 274-282). – 2023.; Mamatov A., Ermo‘minov I. Institutsional islohotlar sharoitida mamlakatni moliyaviy-iqtisodiy xavfsizligini ta’minlash masalalari //Yashil iqtisodiyot va taraqqiyot. – 2024. – Т. 1. – №. 4.; Muradova, N. (2016). Small scale business potential factor analysis and forecast of an increase in Uzbekistan. SAARJ Journal on Banking & Insurance Research, 5(3), 19-29.; Berkinov, B., Dustmurodov, G., Ahmedov, U., Mirzaev, S., Sattorov, O., & Smanova, I. (2022, May). Food Security of the Republic of Uzbekistan and Its State After the Pandemic. In International Scientific Conference on Agricultural Machinery Industry “Interagromash"" (pp. 3110-3116). Cham: Springer International Publishing.; Doschanov, T., Chuponov, S., Ataev, J., Aliyeva, G., & Sapayeva, N. (2023). Role of educational services in innovative and sustainable development of region. In E3S Web of Conferences (Vol. 449, p. 07002). EDP Sciences.; Asqarova M. T. Inklyuziv o‘sishni qo‘llab-quvvatlashning xorijiy mamlakatlar tajribasi //Economics and Innovative Technologies. – 2024. – Т. 12. – №. 6. – S. 94-101.; Quvondiqovich U. B. Advanced foreign experiments in statistical research of the effectiveness of the agrarian sector and directions for their use at local levels //Multidisciplinary Journal of Science and Technology. – 2024. – Т. 4. – №. 2. – S. 28-32.;

Yuqoridagi tadqiqotlarda barqaror iqtisodiy o‘sishda, xususan yashil iqtisodiy o‘sishni ta’minlashda tashkilotlarda boshqaruv xodimlarining xilma-xilligi, atrof-muhitni asrash bo‘yicha aholi savodxonligi ta’siri, tabiiy resurslar, institutsional sifat, innovatsiyalar va savdoning iqtisodiy o‘sishga ta’sirini o‘rganuvchi ba’zi tadqiqotlar mavjud bo‘lsada, barqaror iqtisodiy rivojlanishning asosiy omili sifatida ekologik barqarorlik kontsepsiyasini o‘z ichiga olgan tadqiqotlar kam. Bu ekotizimlarning inson farovonligi va turmush tarzi uchun muhim xizmatlar va resurslarni taqdim etish qobiliyatini aks ettiruvchi ekologik sig‘im sifatida o‘lchanadi. Biroq, mavjud tadqiqotlarning aksariyati, ayniqsa, resurslarga boy mamlakatlarda iqtisodiy ko‘rsatkichlar va barqarorlikka ta’sir qilishda ekologik barqarorlikning rolini e’tiborsiz qoldiradi yoki kam baholaydi. Shu sababli, ushbu tadqiqot mavjud adabiyotlardagi tadqiqot bo‘shlig‘ini empirik dalillar va tahlillar bilan to‘ldirishga hissa qo‘shadi, bu ekologik barqarorlikning tabiiy resurslar, institutsional sifat, innovatsiyalar va savdo kabi boshqa o‘zgaruvchilar bilan qanday o‘zaro ta’sir qilishini va barqaror rivojlanishga ta’sir qilishini o‘rgandi. Bu masalaning ilmiy-uslubiy jihatlarini ishlab chiqish, omillar va tarmoqlarning ta’sirini o‘rganish asosida milliy iqtisodiyotning barqaror rivojlanishini oshirish bo‘yicha amaliy taklif va tavsiyalar ishlab chiqishga asos bo‘lmoqda.

**Tadqiqotning dissertatsiya bajarilgan oliy ta’lim muassasasining ilmiy-tadqiqot ishlari rejalari bilan bog‘liqligi**. Mazkur tadqiqot ishi Toshkent davlat iqtisodiyot universiteti huzuridagi “O‘zbekiston iqtisodiyotini rivojlantirishning ilmiy asoslari va muammolari” ilmiy-tadqiqot markazi ilmiy-tadqiqot ishlari rejasiga muvofiq FZ-5421033210 raqamli “Milliy iqtisodiyotni davlat tomonidan tartibga solish tizimi transformatsiyasining metodologik asoslari” fundamental loyihasi doirasida amalga oshirilgan.

**Tadqiqotning maqsadi** milliy iqtisodiyotni barqaror rivojlantirish metodologiyasini takomillashtirish bo‘yicha taklif va tavsiyalar ishlab chiqishdan iborat.

**Tadqiqot vazifalari**:

milliy iqtisodiyotda barqaror rivojlanishning mohiyati va zaruratini tadqiq etish orqali konseptual asoslarni takomillashtirish;

milliy iqtisodiyotda barqaror rivojlanishni ta’minlashning ilmiy-uslubiy jihatdan takomillashtirish;

milliy iqtisodiyotda barqaror rivojlanishni ta’minlashda zamonaviy makroiqtisodiy tahlil va modellashtirish usullarining nazariy-uslubiy jihatlarini boyitish;

O‘zbekistonda barqaror rivojlanish holati va barqaror rivojlanish siyosatini muvofiqlashtirish amaliyotini tahlil qilish;

O‘zbekistonda yashil iqtisodiyotga o‘tish holati va atmosferaga chiqadigan ifloslantiruvchi moddalar darajasini tadqiq qilish;

barqaror rivojlanish omillarining o‘zaro ta’sirining ekonometrik tahlilini amalga oshirish va tegishli xulosalar olish;

milliy iqtisodiyotda barqaror rivojlanish bilan bog‘liq muammolarini aniqlash va ularni hal qilishga qaratilgan ilmiy-uslubiy taklif va amaliy tavsiyalarni ishlab chiqish.

**Tadqiqotning obyekti** bo‘lib milliy iqtisodiyotning barqaror rivojlanishi bilan bog‘liq faoliyat sohalari hisoblanadi.

**Tadqiqotning predmetini** milliy iqtisodiyotni barqaror rivojlantirish siyosatini amalga oshirish jarayonida yuzaga keladigan ijtimoiy-iqtisodiy munosabatlar tashkil etadi.

**Tadqiqotning usullari.** Tadqiqot jarayonida ilmiy abstraksiya, induksiya va deduksiya, tarkibiy va qiyosiy tahlil, iqtisodiy-matematik modellashtirish, empirik va ekonometrik tahlil, ekspert baholash, korrelyatsion va regression tahlil kabi usullardan foydalanilgan.

**Tadqiqotning ilmiy yangiligi** quyidagilardan iborat:

uslubiy yondashuvga ko‘ra “barqaror rivojlanish” tushunchasi mohiyati demografik-ijtimoiy o‘zgarishlarga ko‘ra ehtiyojni sifat jihatdan yanada to‘laroq qondirish, gender tengligi, ekologik talablar ustuvorligi va tabiiy resurslardan oqilona foydalanish hamda texnologik-innovatsiya va iqtisodiy mexanizmlardan samarali foydalanishga ko‘ra iqlim o‘zgarishiga moslashuvchi hamda mahalliy va global integratsiyaning chuqurlashuvining uzoq muddatli rivojlanishi asosida takomillashtirilgan;

uslubiy yondashuvga ko‘ra hududning ekologik barqarorlik darajasini “yuqori darajadagi muvofiqlik” ($0<GHA\leq0,3$), “o‘rtachadan yuqori darajali muvofiqlik” ($0,3<GHA\leq0,5$), “o‘rta darajali muvofiqlik” ($0,5<GHA\leq0,7$), “past darajali muvofiqlik” ($0,7<GHA\leq1$) guruhlari oralig‘iga ko‘ra tasniflash asosida baholash asoslangan hamda ekologik izning ekologik sig‘imga nisbati barqarorlik mezonlaridan oshmasligi uchun o‘rta muddatlarga mo‘ljallangan yashil iqtisodiyotni rivojlantirish strategiyasini amalga oshirishda ekologik barqarorlik darajasi va ulardan foydalanish samaradorligini baholash indikatorlari taklif etilgan;

resursga boy mintaqalarda iqtisodiy o‘sish ko‘rsatkichlariga ta’sir etuvchi barqaror rivojlanish omillari o‘rtasidagi bog‘liqlikni ifodalovchi ekonometrik modellarga ko‘ra tabiiy resurslardan ortiqcha foydalanishning salbiy oqibatlari va ekologik mustahkamlikning ijobiy ta’siri asoslangan holda ekologik mustahkamlikni oshirish imkoniyatlari ishlab chiqilgan;

iqtisodiyot nazariyasida egri chiziq gipotezasi asoslanib, unga binoan tashkilotlarda boshqaruv xodimlari tarkibidagi gender xilma-xilligi, mustaqil boshqaruvchilar mavjudligi, madaniy va tajriba xilma-xilligi orqali barqaror rivojlanishda yashil iqtisodiy o‘sishga erishilishi imkoniyatlari asoslangan;

iqtisodiyotning real sektorini rag‘batlantirishga yo‘naltirilgan qayta tiklanuvchi energiya manbalari uskunalari, suv nasos stansiyalari hamda ko‘chma generatorlarni sotib olish xarajatlarining bir qismini qoplash uchun byudjetdan moliyalashtiriladigan subsidiya va taqdim etiladigan imtiyozlarning iqtisodiy samaradorligidan kelib chiqib tartibga solish taklifi asoslangan.

**Tadqiqotning amaliy natijalari** quyidagilardan iborat:

milliy iqtisodiyotda barqaror rivojlanish maqsadlari ijrosiga mas'ul organlar o‘rtasida doimiy ma'lumotlarni almashish va iqtisodiy siyosat choralarini birgalikda ishlab chiqish tizimini takomillashtirish bo‘yicha takliflar ishlab chiqilgan;

ekologik barqarorlikni ta'minlash ta'minlash bo‘yicha taklif va tavsiyalar ishlab chiqilgan;

barqaror rivojlanish elementlarini joriy etishning metodologik asoslari bo‘yicha ilmiy-amaliy takliflar keltirilgan;

milliy iqtisodiyotda barqaror rivojlanish siyosatini muvofiqlashtirishda institutsional mexanizmlarni takomillashtirish bo‘yicha takliflar ishlab chiqilgan.

**Tadqiqot natijalarining ishonchliligi**. Dissertatsiya tadqiqotida olingan ilmiy natijalarning ishonchliligi ishda qo‘llanilgan uslubiy yondashuv va usullarning maqsadga muvofiqligi, axborot bazasi rasmiy manbalardan olinganligi hamda xulosa, taklif va tavsiyalarning amaliyotga joriy etilganligi bilan asoslanadi.

**Tadqiqot natijalarining ilmiy va amaliy ahamiyati.** Tadqiqot natijalarining ilmiy ahamiyati milliy iqtisodiyotda barqaror rivojlanish metodologiyasini hozirgi zamon talablari va iqtisodiyotni liberallashtirish maqsadlariga mos ravishda takomillashtirish, rivojlantirish va boyitishga xizmat qilishi bilan belgilanadi.

Tadqiqot natijalarining amaliy ahamiyati ishlab chiqilgan taklif va tavsiyalardan O‘zbekiston Respublikasi Milliy Statistika qo‘mitasi, Iqtisodiyot va moliya vazirligi, Ekologiya, atrof-muhitni muhofaza qilish va iqlim o‘zgarishi vazirligi, Chiqindilarni boshqarish va sirkulyar iqtisodiyotni rivojlantirish agentligi tomonidan barqaror rivojlanish metodologiyasini yanada takomillashtirish yuzasidan qabul qilinayotgan qarorlar, dasturlar va chora-tadbirlar rejasini ishlab chiqish hamda ularni amalga oshirishda foydalanish mumkinligi, shuningdek "Treasury management", "Introduction to economic policy", "Iqtisodiyot nazariyasi", "Yashil iqtisodiyot", "Makroiqtisodiyot" fanlari bo‘yicha darslik, o‘quv dasturlari, sillabuslar va uslubiy qo‘llanmalar tayyorlashda foydalanish mumkinligi bilan izohlanadi.

**Tadqiqot natijalarining joriy qilinishi.** Milliy iqtisodiyotni barqaror rivojlantirish metodologiyasini takomillashtirish bo‘yicha olingan natijalar asosida:

uslubiy yondashuvga ko‘ra "barqaror rivojlanish" tushunchasi mohiyati demografik-ijtimoiy o‘zgarishlarga ko‘ra ehtiyojni sifat jihatdan yanada to‘laroq qondirish, gender tengligi, ekologik talablar ustuvorligi va tabiiy resurslardan oqilona foydalanish hamda texnologik-innovatsiya va iqtisodiy mexanizmlardan samarali foydalanishga ko‘ra iqlim o‘zgarishiga moslashuvchi hamda mahalliy va global integratsiyaning chuqurlashuvining uzoq muddatli rivojlanishi asosida takomillashtirishga oid nazariy xulosa va uslubiy tavsiyalardan 5230600 –"Finance and financial technologies" va 5231300 –"Budget control and treasury" bakalavriat ta'lim yo‘nalishlari talabalari uchun tavsiya etilgan "Treasury management" nomli darslikni tayyorlashda foydalanilgan (Toshkent davlat iqtisodiyot universiteti rektorining 2023-yil 26-iyundagi 211-son buyrug‘i). Mazkur ilmiy natija talabalarda barqaror rivojlanish tushunchasini uning maqsadlari bilan

uyg‘unlashgan holda to‘laqonli tushunish imkoniyatini kengaytirishga xizmat qilgan;

uslubiy yondashuvga ko‘ra hududning ekologik barqarorlik darajasini “yuqori darajadagi muvofiqlik” (0<GHA≤0,3), “o‘rtachadan yuqori darajali muvofiqlik” (0,3<GHA≤0,5), “o‘rta darajali muvofiqlik” (0,5<GHA≤0,7), “past darajali muvofiqlik” (0,7<GHA≤1) guruhlari oralig‘iga ko‘ra tasniflash asosida baholash hamda ekologik izning ekologik sig‘imga nisbati barqarorlik mezonlaridan oshmasligi uchun o‘rta muddatlarga mo‘ljallangan yashil iqtisodiyotni rivojlantirish strategiyasini amalga oshirishda ekologik barqarorlik darajasi va ulardan foydalanish samaradorligini baholash indikatorlari bo‘yicha taklifdan “2025-yil uchun O‘zbekiston Respublikasining Davlat byudjeti to‘g‘risida” 24.12.2024-yildagi O‘RQ-1011-son O‘zbekiston Respublikasining Qonuni”ni ishlab chiqishda (O‘zbekiston Respublikasi Oliy Majlis Senatining Byudjet va iqtisodiy masalalar qo‘mitasining 2025-yil 12-martdagi 05/1051-sonli ma’lumotnomasi) va 5230100 –“Iqtisodiyot” bakalavriat ta’lim yo‘nalishlari talabalari uchun “Introduction to economic policy” nomli darslikni tayyorlashda foydalanilgan (Toshkent davlat iqtisodiyot universiteti rektorining 2023-yil 26-iyundagi 212-son buyrug‘i). Mazkur taklif hududlarning ekologik barqarorlik darajasini baholash aniqligini oshirishga hamda talabalarda ekologik barqarorlik metodologiyasini zamonaviy talablarga ko‘ra amaliy-nazariy faoliyatda foydalanish imkoniyatlarini kengaytirishga muayyan darajada xizmat qilgan.

resursga boy mintaqalarda iqtisodiy o‘sish ko‘rsatkichlariga ta’sir etuvchi barqaror rivojlanish omillari o‘rtasidagi bog‘liqlikni ifodalovchi ekonometrik modellarga ko‘ra tabiiy resurslardan ortiqcha foydalanishning salbiy oqibatlari va ekologik mustahkamlikning ijobiy ta’siri asoslangan holda ekologik mustahkamlikni oshirish imkoniyatlari bo‘yicha taklifdan “2025-yil uchun O‘zbekiston Respublikasining Davlat byudjeti to‘g‘risida”gi qonunni ishlab chiqishda foydalanilgan (O‘zbekiston Respublikasi Oliy Majlisi Senatining Byudjet va iqtisodiy masalalar qo‘mitasining 2025-yil 12-martdagi 05/1051-sonli ma’lumotnomasi). Taklif yashil energiyaga o‘tishni rag‘batlantirish dastaklarini faol qo‘llash va bunday iqtisodiyotga o‘tish yo‘llarini ilmiy asoslashga muayyan darajada xizmat qilgan;

iqtisodiyot nazariyasida egri chiziq gipotezasi asoslanib, unga binoan tashkilotlarda boshqaruv xodimlari tarkibidagi gender xilma-xilligi, mustaqil boshqaruvchilar mavjudligi, madaniy va tajriba xilma-xilligi orqali barqaror rivojlanishda yashil iqtisodiy o‘sishga erishilishi imkoniyatlari bo‘yicha taklif “2025-yil uchun O‘zbekiston Respublikasining Davlat byudjeti to‘g‘risida”gi qonunida (O‘zbekiston Respublikasi Oliy Majlis Senatining Byudjet va iqtisodiy masalalar qo‘mitasining 2025-yil 12-martdagi 05/1051-sonli ma’lumotnomasi) hamda 5230600 –“Finance and financial technologies” va 5231300 –“Budget control and treasury” nomli bakalavriat ta’lim yo‘nalishlari talabalari uchun “Treasury management” nomli darslikni tayyorlashda foydalanilgan (Toshkent davlat iqtisodiyot universiteti rektorining 2023-yil 26-iyundagi 211-son buyrug‘i). Taklif yashil iqtisodiy o‘sishga erishilish yo‘llarining kengaytirishga va ta’lim

sifatini amaliy-nazariy ishlanmalar sifatini oshirishga ko‘ra ko‘tarishga muayyan darajada xizmat qilgan;

iqtisodiyotning real sektorini rag‘batlantirishga yo‘naltirilgan qayta tiklanuvchi energiya manbalari uskunalari, suv nasos stansiyalari hamda ko‘chma generatorlarni sotib olish xarajatlarining bir qismini qoplash uchun byudjetdan moliyalashtiriladigan subsidiya va taqdim etiladigan imtiyozlarning iqtisodiy samaradorligidan kelib chiqib tartibga solish taklifi “2025-yil uchun O‘zbekiston Respublikasining Davlat byudjeti to‘g‘risida”gi qonunga (24.12.2024-y., O‘RQ-1011) kiritilgan (O‘zbekiston Respublikasi Oliy Majlis Senatining Byudjet va iqtisodiy masalalar qo‘mitasining 2025-yil 12-martdagi 05/1051-sonli ma’lumotnomasi). Ushbu taklifning amaliyotga joriy etilishi mamlakatda yashil iqtisodiyotni ta’minlashda yashil energiyaga o‘tishni rag‘batlantirish va ko‘lamini oshirish imkoniyatlarini kengaytirishga muayyan darajada xizmat qilgan.

**Tadqiqot natijalarining aprobatsiyasi.** Dissertatsiya tadqiqoti natijalari 4 ta, jumladan 2 ta respublika va 2 ta xalqaro ilmiy-amaliy anjumanlarda muhokama qilingan.

**Tadqiqot natijalarining e’lon qilinganligi.** Dissertatsiya mavzusi bo‘yicha jami 35 ta ilmiy ish, jumladan 1 ta monografiya, OAK tomonidan tavsiya etilgan ilmiy jurnallarda 12 ta maqola milliy va 22 ta maqola xorijiy va Scopus jurnallarida nashr qilingan.

**Dissertatsiyaning tuzilishi va hajmi.** Dissertatsiya kirish, 4 ta bob, xulosa, foydalanilgan adabiyotlar ro‘yxati va ilovalardan iborat. Dissertatsiyaning hajmi 223 betni tashkil etadi.

## DISSERTATSIYANING ASOSIY MAZMUNI

**Kirish** qismida dissertatsiya mavzusining dolzarbligi va zarurligi asoslangan, tadqiqot maqsadi va asosiy vazifalari, tadqiqot obyekti va predmeti shakllantirildi, uning respublika fan va texnikasi rivojlanishining ustuvor yo‘nalishlariga bog‘liqligi ko‘rsatiladi, ilmiy yangilik tavsiflanadi va tadqiqotning amaliy natijalari, olingan natijalarning ilmiy-amaliy ahamiyatini ta’kidlangan, Tadqiqot natijalarining joriy qilinishi, nashr etilgan ishlar va dissertatsiya tuzilishi haqida ma’lumot berilgan.

Dissertatsiyaning **birinchi bobi “Milliy iqtisodiyotni barqaror rivojlanishini ta’minlashning nazariy va amaliy asoslari”** deb nomlangan bo‘lib ushbu bobda barqaror rivojlanish nazariyalari, iqtisodiy, ijtimoiy va ekologik barqarorlikning tamoyillari, shuningdek, milliy iqtisodiyotning barqaror rivojlanishga oid nazariy asoslari ko‘rib chiqilgan.

Jahon bankining ta’rifiga binoan “barqaror iqtisodiy rivojlanish” — bu nafaqat iqtisodiy o‘sishni, balki ijtimoiy tenglik va atrof-muhitni muhofaza qilishni ham o‘z ichiga olgan ko‘p qirrali tushunchadir[7]. Barqaror iqtisodiy rivojlanishga erishish uchun tabiiy resurslardan foydalanishni ekologik barqarorlikni saqlash bilan muvozanatlash talab etiladi, bu ekotizimlarning buzilishlarni qabul qilish va

[7] World Bank, 2019. World Development Report 2020: Trading for Development in the Age of Global Value Chains. The World Bank.

o‘z funksiyalari va xizmatlarini saqlab qolish qobiliyatidir[8]. Nazariy qismda “barqaror rivojlanish” ta’riflari tahlil qilindi (1-jadvalga qarang).

**1-jadval.**

**“Barqaror rivojlanish” ta’riflari tahlili[9]**

| Manba | Barqaror rivojlanish | Farqli jihatlari |
|---|---|---|
| Brundtland G. H. (1987) | Norvegiya sobiq bosh vaziri, u 1987 yilda "Barqaror rivojlanish" kontseptsiyasini ommalashtirgan Brundtland hisobotini ishlab chiqdi. Ushbu hisobotda barqaror rivojlanish" kelajak avlodlarning ehtiyojlarini qondirish imkoniyatlarini cheklamasdan hozirgi avlodning ehtiyojlarini qondirish" deya ta’riflangan. | barqaror rivojlanishning ijtimoiy jihatlari yetarlicha yoritilmagan |
| A. Usmonov (2020) | Barqaror rivojlanish — bu qayta tiklanadigan tabiiy, ishlab chiqarish va mehnat omillari bilan ta’minlangan YaIMning miqdoriy va sifat jihatidan o‘sishi. | barqaror rivojlanishning ijtimoiy va ekologik jihatlari yetarlicha yoritilmagan |
| Tomas, (2015) | Barqarorlik inson faoliyatining resurslarni tugatmasdan ehtiyojlarni qondirishni anglatadi. | kelajak avlodlarning ehtiyojlari inobatga olinmagan |
| Rossiya Federatsiyasining 1996 yil 19 iyundagi 78-FZ-sonli "Rossiya Federatsiyasi shimolidagi ijtimoiy-iqtisodiy rivojlanishni davlat tomonidan tartibga solish asoslari to‘g‘risida" Federal qonuni, 1-modda. | barqaror rivojlanish — ishlab chiqarish, ijtimoiy soha, aholi va tabiiy muhitning uyg‘un rivojlanishi. | Texnologik taraqqiyot va innovatsiyalar roli e’tiborga olinmagan.<br>Gender tengligi va ijtimoiy adolatni rivojlantirish kabi muhim ijtimoiy jihatlar ko‘rsatilmagan. |
| Robert, Kates W.; Parris, Thomas M.; Leiserowitz, Anthony A. (2005) | sayyora yaxlitligini buzmasdan, yashash sharoitlari va resurslari inson ehtiyojlarini qondiradigan jamiyatga ega bo‘lishdir. | Gender masalalari va ijtimoiy adolat to‘liq yoritilmagan. |
| Mensah, Adliya (2019) | Barqaror rivojlanish — sayyora yaxlitligini buzmasdan, yashash sharoitlari va resurslari inson ehtiyojlarini qondiradigan jamiyatga ega bo‘lish. | Innovatsiyalar va texnologiyalar barqaror rivojlanishga qanday yordam berishi ko‘rsatilmagan. |
| Basiago, AD (1999). | Barqaror rivojlanish — iqtisodiyot, atrof-muhit va jamiyat ehtiyojlarini muvozanatlashtirishga qaratilgan (Basiago, 1999). | Gender masalalari va inson huquqlari , Yashil iqtisodiyot yoki moliyalashtirish haqida hech narsa deyilmagan. |
| Tjarve, B. va Zemite, I. (2016). | Barqaror rivojlanish — sog‘lom iqtisodiy, ekologik va ijtimoiy hayotni yaxshilash va qo‘llab-quvvatlashni anglatadi. | Kelajak avlod masalasining yo‘qligi |
| Stoddart (2011) | Barqarorlik samarali va adolatli bo‘lib, resurslarni avlodlar va avlodlararo taqsimlashni cheklangan ekotizim doirasidagi ijtimoiy-iqtisodiy faoliyat bilan bog‘laydi. | texnologiyalar, gender tengligi, ijtimoiy adolat, yetarlicha yoritilmagan. |
| Ben-Eli (2015) | Barqarorlikni aholi va uning atrof-muhit o‘rtasidagi dinamik muvozanat sifatida ko‘radi. | Ijtimoiy adolat yoritilmagan. |

Yuqoridagi ta’riflar barqaror rivojlanishning maqsadlarini to‘liq ifodalamaganligi uchun muallif tomonidan Barqaror rivojlanishga yuqoridagi

[8] Folke, C., Polasky, S., Rockstrom, J., Galaz, V., Westley, F., Lamont, M., et al., 2021. Our future in the Anthropocene biosphere. Ambio 50, 834–869.

[9] Muallif tomonidan ishlab chiqildi.

ta’riflar o‘rganilib, uning kamchiliklari inobatga olinib quyidagicha yangi ta’rif ishlab chiqilgan: *"Barqaror rivojlanish – demografik o‘zgarishlarni inobatga olgan holda ularning ehtiyojlarini qondirish imkoniyatiga zarar yetkazmasdan hozirgi zamon ehtiyojlarini qondiradigan, ijtimoiy adolatni ta’minlaydigan, gender tengligini qo‘llab-quvvatlaydigan, atrof-muhitni muhofaza qiladigan, tabiiy resurslardan oqilona foydalanadigan, texnologik innovatsiyalar va iqtisodiy mexanizmlardan samarali foydalangan holda iqlim o‘zgarishiga moslashuvchi va mahalliy hamda global integratsiyani kuchaytiruvchi uzoq muddatli rivojlanish modelidir".*

Inson farovonligi va hayoti uchun muhim bo‘lgan ekologik barqarorlik oziq-ovqat, suv, energiya, sog‘liq va xavfsizlik kabi muhim xizmatlarning asosini tashkil qiladi[10]. Biroq, u iqlim o‘zgarishi, biologik xilma-xillikning yo‘qolishi, erning degradatsiyasi, ifloslanishi va resurslardan ortiqcha foydalanish tahdidlariga duch kelmoqda[11]. Ekotizimning buzilishlarga, jumladan, iqlim o‘zgarishlari, zararkunandalar va kasalliklarga bardosh berish va ularni tiklash qobiliyati sifatida tavsiflangan ekotizim barqarorligi barqaror iqtisodiy taraqqiyot uchun muhim ahamiyatga ega. Rivojlanayotgan ekotizimlar oziq-ovqat, suv, toza havo, dori-darmon va dam olish imkoniyatlarini o‘z ichiga olgan turli xil ajralmas tovarlar va xizmatlarni taqdim etadi[12]. Ayniqsa, resurslarga boy mamlakatlarda ekotizimlarning mustahkamligi barqaror iqtisodiy taraqqiyot uchun asosiy omil bo‘lib turishi mumkin, chunki u kelajak avlodlar farovonligi uchun tabiiy resurslar va ekotizim xizmatlarining doimiy mavjudligini kafolatlaydi.

Shuningdek milliy iqtisodiyotda barqaror rivojlanishni ta’minlashda xorijiy davlatlar tajribasi tahlil qilib, O‘zbekiston uchun mos taklif va tavsiyalar ishlab chiqilgan. Xususan, **Janubiy Koreya** tajribasidan kelib chiqib O‘zbekiston uchun raqamli texnologiyalarni qayta ishlash va chiqindilar monitoringida joriy etish, energiya tejamkor uskunalarni keng qo‘llash, O‘zbekistonga import qilinayotgan energiya samaradorligi “A” toifaga kirmagan maishiy texniklarning importini cheklash takliflari ishlab chiqilgan.

**Germaniya** "Energiewende" (Energiya inqilobi) strategiyasi asosida qayta tiklanadigan energiya manbalarini rivojlantirgan va chiqindilarni qayta ishlash bo‘yicha ilg‘or tizim yaratgan. Germaniyada elektr transport vositalari uchun quvvatlantirish infratuzilmasi keng rivojlangan. Germaniya tajribasidan kelib chiqib O‘zbekiston uchun quyosh va shamol energiyasidan foydalanishni kengaytirish, qayta ishlash sanoatini rivojlantirish uchun davlat-xususiy sherikligini rag‘batlantirish bo‘yicha takliflar ishlab chiqilgan.

**Shvetsiya** chiqindilarni qayta ishlash darajasi bo‘yicha dunyoda yetakchi davlatlardan biri bo‘lib, chiqindilarning 99% dan ortig‘ini qayta ishlaydi yoki energiya ishlab chiqarishda foydalanadi. Shvetsiya tajribasidan kelib chiqib O‘zbekiston uchun chiqindilarni qayta ishlash zavodlarini qurish va chiqindilarni

[10] Perrings, C., 1998. Introduction: resilience and sustainability. Environ. Dev. Econ. 3 (2), 221–262.
[11] Perrings, C., 2006. Resilience and sustainable development. Environ. Dev. Econ. 11 (4), 417–427
[12] Yi, C., Jackson, N., 2021. A review of measuring ecosystem resilience to disturbance. Environ. Res. Lett. 16 (5), 053008.

energiya ishlab chiqarish manbasiga aylantirish, aholi orasida ekologik madaniyatni rivojlantirish uchun keng targ‘ibot ishlari takliflari ishlab chiqilgan.

**Xitoy**da sanoat chiqindilarini kamaytirish va yashil texnologiyalarni joriy qilish orqali barqaror rivojlanishga erishilmoqda. "Yashil iqtisodiyot" modeli iqtisodiy rivojlanish va ekologik xavfsizlikni birlashtirgan. Xitoy tajribasidan kelib chiqib, O‘zbekiston uchun mahalliy sanoat tarmoqlarida ekologik toza texnologiyalarni joriy qilish, davlat tomonidan yashil texnologiyalarni rivojlantirish uchun subsidiyalar ajratish bo‘yicha bir qator takliflar ishlab chiqilgan.

Elektr avtobuslar, tramvay va trolleybuslarni tanlashda ularning atrof-muhitga ta’siri, texnologik imkoniyatlar va iqtisodiy samaradorlikni hisobga olish muhim. Elektr avtobuslarning akkumulyatorlarini qayta ishlash bilan bog‘liq muammolarni inobatga olgan holda, tramvaylar va trolleybuslar ekologik va texnologik jihatdan muqobil transport turi sifatida ko‘rilishi mumkin. Statistik ma’lumotlarga ko‘ra tramvayda yo‘lovchilar soni boshqalarga nisbatan ko‘p kuzatiladi, narxi arzon bo‘ladi, yo‘lovchi oqimi ko‘pligi sababli iqtisodiy samaradorligi yuqori bo‘ladi. Bugungi kunda xorijiy davlatlardan Shveytsariya, Italiya, Chexiya, Vengriya, Gretsiya, Polsha, Ruminiya, Rossiya, Belarus, Qozog‘iston, Xitoy, Shimoliy Koreya, Eron, AQSh, Kanada, Meksika, Braziliya, Argentina, Ekvadorda trolleybuslar foydalanilayotgan davlatlar bilan tanishish mumkin. Dissertatsiya ishi takliflaridan kelib chiqib O‘zbekiston Respublikasi Prezidentining 30.01.2025 yildagi PF-16-sonli “O‘zbekiston — 2030” strategiyasini “Atrof-muhitni asrash va “yashil iqtisodiyot” yilida amalga oshirishga oid davlat dasturi to‘g‘risidagi farmonining 51-maqsad 33-bandiga Toshkent shahrida tramvay liniyasi qurish loyihasini ishlab chiqish vazifasi va Urganch-Xiva yo‘nalishiga yangi 10 ta trolleybuslarni xarid qilish vazifalari kiritilgan[13].

**Ikkinchi bob “Iqtisodiyotni barqaror rivojlantirishni ta’minlash metodologiyasini takomillashtirish”** deb nomlanib, ushbu bobda barqaror rivojlanish bo‘yicha xorijiy tajribalar o‘rganilgan va O‘zbekiston iqtisodiyoti sharoitiga moslashtirish, shuningdek, resurslardan samarali foydalanish va chiqindilarni boshqarish bo‘yicha amaliy mexanizmlar ishlab chiqish masalalari yoritilgan.

Tadqiqotda ekologik barqarorlikni hisoblash metodologiyasi takomillashtirilgan.

$$GHA = Ekologik\ iz / ekologik\ sig`im \quad (1)$$

Bu yerda,

**GHA** (Global Hectare)- ekologik barqarorlik darajasi

**Ekologik iz** (Global Footprint) - Iste’mol qilingan resurslar(energiya, transport, oziq-ovqat iste’moli va boshqalar)dan qayta tiklangan resurslar ayirmasi.

**Ekologik sig`im** (biokapasitet) — ekologik tizimlarning o‘z-o‘zini tiklash qobiliyatini va mavjud resurslardan foydalanish imkoniyatlari ya’ni yer maydoni, o‘rmonlar, suv resurslari va ularning ishlab chiqarish hajmining 1 kishiga nisbati.

[13] “Ўзбекистон – 2030” – халқ стратегияси Онлайн портали. https://uzbekistan2030.uz/uzc/muhokama

GHA hisoblash uchun, ekologik izni ekologik sig`im ga taqqoslash kerak. Bu jarayon, har bir shaxs yoki mamlakatning GHAda qanchalik resurs iste'mol qilayotganini ko'rsatadi.

*Natijada uslubiy yondashuvga ko'ra hududning ekologik barqarorlik darajasini hisoblashda "yuqori darajadagi muvofiqlik" (0<GHA≤0,3), "o'rtachadan yuqori darajali muvofiqlik" (0,3<GHA≤0,5), "o'rta darajali muvofiqlik" (0,5<GHA≤0,7), "past darajali muvofiqlik" (0,7<GHA≤1) guruhlariga ko'ra tasniflash orqali baholash hamda ekologik izning ekologik sig'imga nisbati barqarorlik mezonlaridan oshmasligi uchun o'rta muddatlarga mo'ljallangan yashil iqtisodiyotni rivojlantirish strategiyasini amalga oshirishda ekologik barqarorlik darajasi va ulardan foydalanish samaradorligini baholash indikatorlari asoslangan.*

Agar insonning ekologik izi ekologik sig'imdan oshsa, bu resurslarning kamayishi, ekologik barqarorlikning buzilishi va tabiiy muvozanatning yo'qolishiga olib kelishi mumkin. Shuning uchun ekologik sig'imni oshirish va ekologik izni kamaytirish, barqaror rivojlanish va ekologik xavfsizlikni ta'minlash uchun zarurdir.

Barqaror iqtisodiy rivojlanish bugungi kunda resursga boy mintaqalar uchun muhim vazifa hisoblanadi. Ushbu jarayonda iqtisodiy o'sishni ekologik barqarorlik va ijtimoiy adolat bilan uyg'unlashtirish zarur. Texnologik innovatsiyalar, tabiiy resurslardan samarali foydalanish va ekologik mustahkamlikni oshirish barqaror rivojlanish uchun hal qiluvchi ahamiyatga ega. Shu sababli, mazkur bo'limda ushbu omillarning iqtisodiy barqarorlikka ta'siri tahlil qilingan.

Mazkur tadqiqotda resursga boy mamlakatlarda barqaror iqtisodiy rivojlanish omillari empirik asosda o'rganilgan. Tadqiqot uchun 1995–2020-yillar oralig'idagi panel ma'lumotlardan foydalanilgan bo'lib, 10 ta yuqori resursli davlatlar misolida tahlil o'tkazilgan. Tadqiqot usullaridan Panel, ekonometrik modellardan uzoq va qisqa muddatli bog'liqlikni o'rganish uchun ARDL modeli va AMG regressiyasi ishlatilgan. Ma'lumotlarning statsionarligini va o'zaro bog'liqlikni aniqlash maqsadida Westerlund ko-integratsiya testi va CIPS birlik ildizi testi qo'llanilgan. Ekologik sig'im indikatoridan foydalanilib, ekologik resurslarning iqtisodiy rivojlanishga ijobiy ta'siri asoslandi.

Ekologik sig'im – bu ekologik tizimning inson ehtiyojlari uchun zarur bo'lgan tabiiy resurslarni ishlab chiqarish va inson faoliyati natijasida hosil bo'ladigan chiqindilarni o'zlashtirish qobiliyatini ifodalovchi ko'rsatkichdir. U global gektar (Gha) bilan o'lchanadi va bir kishiga to'g'ri keladigan tabiiy resurslar hajmini aks ettiradi. Yuqori ekologik sig'imga ega hududlar tabiiy resurslarga boy bo'lib, ko'proq chiqindilarni qayta ishlay oladi, past ekologik sig'im esa tabiiy resurslardan ortiqcha foydalanish yoki degradatsiyani bildiradi.

Ekologik sig'imning tabiiy tizimlarning oziq-ovqat, yog'och, toza suv kabi qayta tiklanadigan resurslarni ishlab chiqarish imkoniyatini, atmosferadagi karbonat angidrid gazini yutish yoki chiqindilarni yo'q qilish qobiliyatini o'z ichiga oladi. Ekologik sig'im va inson ehtiyojlari o'rtasidagi nisbat muhim ahamiyatga ega. Agar inson faoliyati ekologik sig'imdan oshib ketsa, bu ekologik

muvozanatning buzilishiga olib keladi. Quyida ekologik barqarorlikni hisoblashning ekonometrik tahlili amalga oshirildi:

**GDPPC** (Gross Domestic Product Per Capita) bog‘liq o‘zgaruvchi bo‘lib aholi jon boshiga to‘g‘ri keladigan yalpi ichki mahsulot (2023-yil narxlarida o‘lchangan, AQSh dollarida).

Mustaqil o‘zgaruvchilar:

**BIO** — ekologik sig‘imni;

**TECH** — texnologik rivojlanish darajasini ifodalaydi, mahalliy va xorijiy ixtirochilar tomonidan ro‘yxatdan o‘tkazilgan patentlar soni;

**NR** tabiiy resurslardan foydalanish samaradorligini ifodalaydi, tabiiy resurs rentasi YAIMga nisbatan foizda o‘lchanadi;

**INS** -tashkilot sifatini ifodalaydi, hukumat samaradorligi indeks (iqtisodiy va siyosiy tashkilotlarning samaradorligini -2.5 dan +2.5 gacha bo‘lgan indeks) bilan ifodalanadi;

**TOP** — savdo ochiqligini ifodalaydi, xalqaro savdo hajmining YAIMga nisbati orqali foizda ifodalanadi.

**2-jadval.**

**O‘zgaruvchilarning statistik ma’lumotlari izohi[14]**

| Ko‘rsatkichlar | O‘rtacha | Standart xatolik | Minimum | Maximum |
|---|---|---|---|---|
| Aholi jon boshiga YaIM | 39 928 | 16 238 | 2168 | 87124 |
| Tabiiy resurs (%YaIM) | 0,85 | 1.51 | 0,01 | 8.68 |
| Jami Patentlar | 103 415 | 156 510 | 1447 | 621 453 |
| Aholi tomonidan Patentlar | 34 875 | 63,112 | 124 | 336 340 |
| Norezidentlar tomonidan Patentlar | 68 540 | 109,200 | 1283 | 387 364 |
| Savdo (%YaIM) | 54.2 | 23.9 | 15.8 | 133.7 |
| Hukumat samaradorligi indeks | 1.15 | 1.06 | - 2.09 | 2.16 |
| Biologik sig‘im aholi jon boshiga | 4.3 | 5.7 | -1.3 | 18.2 |

Statistik ma’lumotlariga e’tibor beradigan bo‘lsak davlatlarda aholi jon boshiga YaIM (Yalpi ichki mahsulot) uchun minimal qiymat atigi $2168 bo‘lsa-da, maksimal qiymat $87124 ni tashkil etadi. Bu katta tafovut iqtisodiy tengsizlikni ko‘rsatib turibdi. O‘rtacha qiymat $39928 bo‘lib, ba’zi mamlakatlarda juda yuqori farovonlik darajasini bildiradi. Tabiiy resurslarning YaIMga nisbati (0.85) past bo‘lsa-da, maksimal qiymat 6.68 gacha yetadi. Bu ayrim davlatlarda resurslarga juda katta tayanish mavjudligini, biroq ko‘pchilikda ular unchalik muhim emasligini ko‘rsatadi. Resurslar ko‘p bo‘lsa ham, bu har doim samaradorlik degani emas. Patentlar sonidagi keskin tafovutlar (min 1447, max 621453) texnologik taraqqiyotda katta tafovutlar borligini bildiradi. Norezidentlar tomonidan olingan patentlarning o‘rtacha soni (68 540) ichki innovatsion faollik emas, balki xalqaro kompaniyalar va investorlarning rolini anglatadi. Bu ba’zi mamlakatlar innovatsiya eksportchilari bo‘lishi mumkinligini bildiradi. Keyingi bosqichda ushbu ma’lumotlar asosida regressiya modeli ishlab chiqildi (3-jadvalga qarang).

[14] Standart and Poors, Jahon banki ma`lumolari asosida muallif tomonidan ishlab chiqildi.

**3-jadval.**

**AMG regressiya modeli[15]**

| LnGDPPC | Coefficients | St.d Error | t-value | p-value |
|---|---|---|---|---|
| LnBIO | 0.201*** | 0.069 | 2.902 | 0.004 |
| INS | 0.144*** | 0.021 | 6.685 | 0.000 |
| LnNR | −0.057*** | 0.005 | −10.646 | 0.000 |
| LnTECH | 0.146*** | 0.022 | 6.553 | 0.000 |
| LnTOP | 0.429*** | 0.042 | 10.201 | 0.000 |
| Short Run Equation | | | | |
| C | 2.709** | 1.353 | 2.003 | 0.047 |
| ΔLnBIO | −0.073* | 0.043 | −1.668 | 0.098 |
| ΔINSΔ | −0.023* | 0.013 | −1.769 | 0.079 |
| ΔLnNR | 0.002 | 0.016 | 0.118 | 0.906 |
| ΔLnTECH | −0.015 | 0.094 | −0.155 | 0.877 |
| ΔLnTOP | 0.058 | 0.111 | 0.525 | 0.601 |
| $ECM_{t-1}$ | −0.272** | 0.135 | −2.020 | 0.045 |

*Izoh: *** ko'rsatadi 1%, ** 5% va * 10% da ahamiyatlilik darajasini ifodalaydi.*

Tadqiqot natijasida, ekologik mustahkamlikning iqtisodiy o'sishga ijobiy ta'siri (0,201%), tabiiy resurslardan ortiqcha foydalanishning salbiy ta'siri (-0,057%), innovatsiyalar va texnologik rivojlanishning iqtisodiy o'sishga ta'siri (0,146%), barqaror iqtisodiy rivojlanishga savdo ochiqligi (0,429%) va hukumat samaradorligi (0,144%) ijobiy ta'siri ekonometrik tadqiqotlarda asoslandi.

Jumladan, tadqiqot birinchi marta ekologik barqarorlikni ekologik sig'im orqali o'lchanib, uning iqtisodiy o'sishga uzoq muddatli ijobiy ta'sirini isbotlangan. Tabiiy resurslarga yuqori darajada bog'liqlik barqaror iqtisodiy rivojlanish uchun uzoq muddatli salbiy ta'sir ko'rsatishi aniqlangan. Bu, tabiiy resurslarni boshqarishda diversifikatsiya va samaradorlikni oshirish zaruratini ko'rsatgan. Texnologik innovatsiyalar uzoq muddatli iqtisodiy o'sishning asosiy drayveri sifatida aniqlangan. Iqtisodiy resurslarning samarali boshqarilishi va diversifikatsiyani kuchaytirish orqali ijobiy natijalarga olib kelishi mumkinligi asoslangan. Savdo ochiqligi barqaror iqtisodiy rivojlanishga sezilarli darajada hissa qo'shgan. Resurslardan samarali foydalanish va texnologiyalarni jalb qilish orqali xalqaro savdoning ijobiy ta'sirini tasdiqlangan. Barqaror iqtisodiy rivojlanishga tashkilot sifatining ijobiy ta'siri aniqlandi. tashkilotlarning mustahkamligi va samaradorligi iqtisodiy o'sishni barqarorlashtirish uchun muhim omil ekanligi isbotlangan.

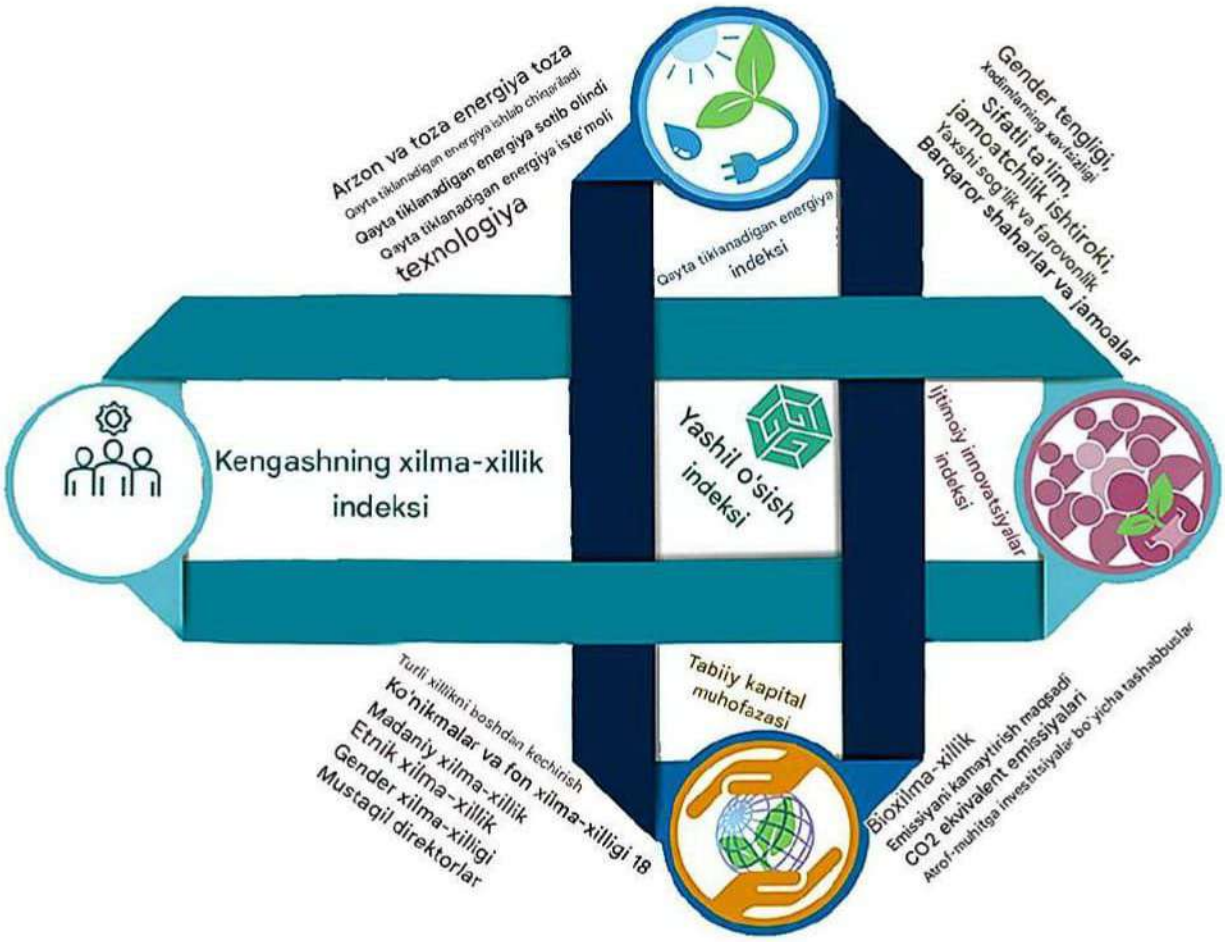
*Natijada resursga boy mintaqalarda iqtisodiy o'sish ko'rsatkichlariga ta'sir etuvchi barqaror rivojlanish omillari o'rtasidagi bog'liqlikni ifodalovchi ekonometrik modellarga ko'ra tabiiy resurslardan ortiqcha foydalanishning salbiy oqibatlari va ekologik mustahkamlikning ijobiy ta'siri asoslangan holda ekologik mustahkamlikni oshirish imkoniyatlari ishlab chiqilgan.*

Keyingi tadqiqotda tashkilotlarda boshqaruv xodimlari (tashkilotlarda boshqaruv xodimlari) xilma-xilligi yashil o'sish, qayta tiklanadigan energiya, ijtimoiy inklyuzivlik va tabiiy kapitalni himoya qilish kabi omillarga qanday ta'sir qilishi tahlil qilingan.

[15] Muallif tomonidan ishlab chiqildi.

Xususan, tashkilotlarda boshqaruv xodimlari xilma-xilligi boshqaruv organlarida gender xilma-xilligi, tajriba xilma-xilligi, madaniy xilma-xillik, professional ma'lumot va mustaqil direktorlar mavjudligi kabi o'lchovlar orqali tahlil qilingan. Bu xilma-xillik ekologik, iqtisodiy va ijtimoiy jihatlarga sezilarli ta'sir ko'rsatishi aniqlangan. Gender xilma-xilligi va mustaqil direktorlarning mavjudligi qayta tiklanadigan energiya manbalarini ko'paytirish va tabiiy kapitalni himoya qilishga ijobiy ta'sir ko'rsatgan.

Rasmda Tashkilotlarda boshqaruv xodimlari xilma-xilligi (Board Diversity Index) va yashil o'sish indeksi (Green Growth Index) o'zaro chambarchas bog'liq ekanligi ko'rsatilgan:




**1-rasm. Tashkilotlarda boshqaruv xodimlari xilma-xilligi va yashil o'sish indeksi bog'liqlik grafigi[16].**

Rasmga ko'ra tashkilotlarda boshqaruv xodimlari xilma-xilligi tashkilotning strategik qarorlariga ta'sir qilib, yashil o'sishning yuqoridagi uch asosiy komponenti (qayta tiklanadigan energiya indeksi, ijtimoiy innovatsiyalar va tabiiy kapitalni himoya qilish)ni rivojlantiradi. Har bir xilma-xillik elementi (gender, madaniyat, tajriba, va hokazo) yashil o'sishga individual ta'sir ko'rsatadi, masalan, qayta tiklanadigan energiya yoki ijtimoiy inklyuzivlikni qo'llab-quvvatlash orqali.

[16] Muallif ishlanmasi.

**4-jadval.**

## O‘zgaruvchilar tasnifi[17]

| O‘zgaruvchilar | O‘zgaruvchi nomi | Belgi | O‘lchov |
|---|---|---|---|
| Mustaqil o‘zgaruvchilar | Tashkilotlarda boshqaruv xodimlari xilma-xillik indeksi | BDIN | Indeks reytingi beshta xilma-xillik bo‘yicha tuzilgan |
| | Ishchi kuchi xilma-xilligi | WFD | Ish joylarida ishchi kuchining xilma-xilligi |
| | Gender xilma-xilligi | GND | Tashkilotlarda boshqaruv xodimlari xonalarida ayol direktorlarning bir qismi |
| | Turli xillikni boshdan kechirish | EXD | Tashkilotlarda boshqaruv xodimlari xonalarida tajribali direktorlar nisbati |
| | Etnik xilma-xillik | ETD | Tashkilotlarda boshqaruv xodimlari xonalarida xorijiy direktorlarning bir qismi |
| | Ma’daniy xilma-xillik | CLD | Turli madaniyatlarga ega bo‘lgan rejissyorlarning bir qismi |
| | Professional fon va ko‘nikmalar | PBD | professional ma’lumotlarga ega direktorlar |
| | Mustaqil direktorlar | IND | Tashkilotlarda boshqaruv xodimlarida mavjud bo‘lgan tashqi direktorlarning umumiy soni |
| Bog‘liq o‘zgaruvchilar | Yashil o‘sish indeksi | GGI | Qayta tiklanadigan energiya indeksi, ijtimoiy inklyuzivlik va tabiiy kapitalni himoya qilish indeksi yig‘indisi |
| | Qayta tiklanadigan energiya indeksi | REIN | Beshta toza energiya elementi bo‘yicha tuzilgan indeks reytingi |
| | Umumiy qayta tiklanadigan energiya | TREN | Yiliga qayta tiklanadigan energiyaning umumiy miqdori |
| | Arzon va toza energiya | ACE | BRM7 tomonidan o‘lchangan |
| | Qayta tiklanadigan energiya iste’moli | REC | Yiliga jami iste’mol qilinadigan qayta tiklanadigan energiya |
| | Qayta tiklanadigan energiya sotib olindi | REP | Jami qayta tiklanadigan energiya yiliga sotib olinadi |
| | Qayta tiklanadigan energiya ishlab chiqariladi | REPO | Jami qayta tiklanadigan energiya yiliga ishlab chiqariladi |
| | Yashil ta’minot zanjiri | GSC | Yashil ishlab chiqarish va yashil logistikani qabul qilish |
| | Yashil texnologiya | GTH | Yiliga toza texnologiyaga sarflangan xarajatlar |
| | Tabiiy kapitalni muhofaza qilish indeksi | NCIN | Tabiiy kapitalning to‘rtta elementi bo‘yicha tuzilgan indeks ballari |
| | Bioxilma-xillik | BID | Tirik organizmlar va yashash joylarini himoya qilishga qaratilgan sa’y-harakatlar |
| | Emissiyani kamaytirish maqsadlari | ERT | Maqsadlar issiqxona chiqindilarini kamaytirishga qaratilgan |
| | $CO_2$ ekvivalenti emissiyasi | CEE | Uglerod chiqaradigan gazlarning umumiy miqdori |
| | Ekologik investitsiya tashabbuslari | EII | Atrof-muhit barqarorligini ta’minlash va tabiiy resurslarni muhofaza qilish bo‘yicha moliyaviy harakatlar |
| | Ijtimoiy inklyuzivlik indeksi | SCIN | Ijtimoiy rivojlanishning besh moddasi bo‘yicha tuzilgan indeks reytingi |
| | Gender tengligi | GE | BRM5 tomonidan o‘lchangan |
| | Xodimlar xavfsizligi bo‘yicha trening | EST | Ish joyida o‘qitish tashabbusi |
| | Sifatli ta’lim | QE | BRM4 tomonidan o‘lchangan |
| | Jamiyat ishtiroki | CI | Jamiyat a’zolarining ijtimoiy hissalari |
| | Yaxshi sog‘liq va farovonlik | GHW | BRM3 tomonidan o‘lchangan |
| | Barqaror shaharlar va jamiyatlar | SCS | BRM11 tomonidan o‘lchangan |
| Nazorat o‘zgaruvchilar | Qo‘yilgan kapitalning daromadliligi | ROC | Soliqdan keyin foyda/Investitsiya qilingan umumiy kapital |
| | O‘z kapitalining rentabelligi | ROE | Soliqdan keyingi foyda/ Umumiy kapital |

Tadqiqotda 2012–2023-yillar oralig‘ida 451 ta nomoliyaviy kompaniyadan olingan ma’lumotlar tahlil qilingan. Tadqiqot usullar Panel ma’lumotlar tahlili,

[17] Muallif ishlanmasi.

Kvantil regressiyaning umumlashtirilgan usuli (GMM (Generalized Method of Moments)), MMQR (Momentga Asoslangan Kvantil Regressiya) usuli tashkilotlarda boshqaruv xodimlari xilma-xilligining yashil o‘sishga assimetrik ta’sirini o‘rganish uchun qo‘llanilgan, empirik modellashtirish, pearson korellyatsiya testi tashkilotlarda boshqaruv xodimlari xilma-xilligi va yashil o‘sish ko‘rsatkichlari o‘rtasidagi bog‘liqlik darajasini o‘lchash uchun ishlatilgan.
Quyidagi 1-jadvalda taklif qilingan modelga kiritilgan o‘zgaruvchilar va ularning belgilarini o‘lchash haqida batafsil ma’lumot berilgan (4-jadvalga qarang).

Natijalar atrof-muhit nuqtai nazaridan investorlar, siyosatchilar va tartibga soluvchilar uchun muhim amaliy ahamiyatga ega. Natijalar tashkilotlarda yuqori boshqaruv guruhining xilma-xilligi va yashil o‘sish amaliyotlari o‘rtasidagi U shaklidagi aloqa aniqlandi. Bundan tashqari, tadqiqotda ayol direktorlarning ijtimoiy inklyuzivlikni rag‘batlantirish, gender sotsializatsiyasi nazariyasini mustahkamlashdagi rolini ta’kidlaydi, chunki ayollar manfaatdor tomonlarning manfaatlarini birinchi o‘ringa qo‘yishadi va atrof-muhitga nozik sezgirlikni namoyish etadilar. Ushbu tajriba yashil amaliyotlar bo‘yicha ongli qarorlar qabul qilishga yordam beradi, shu bilan birga turli xil madaniy kelib chiqishi bo‘lgan direktorlar qayta tiklanadigan energiyani qabul qilishga ijobiy ta’sir ko‘rsatgan.

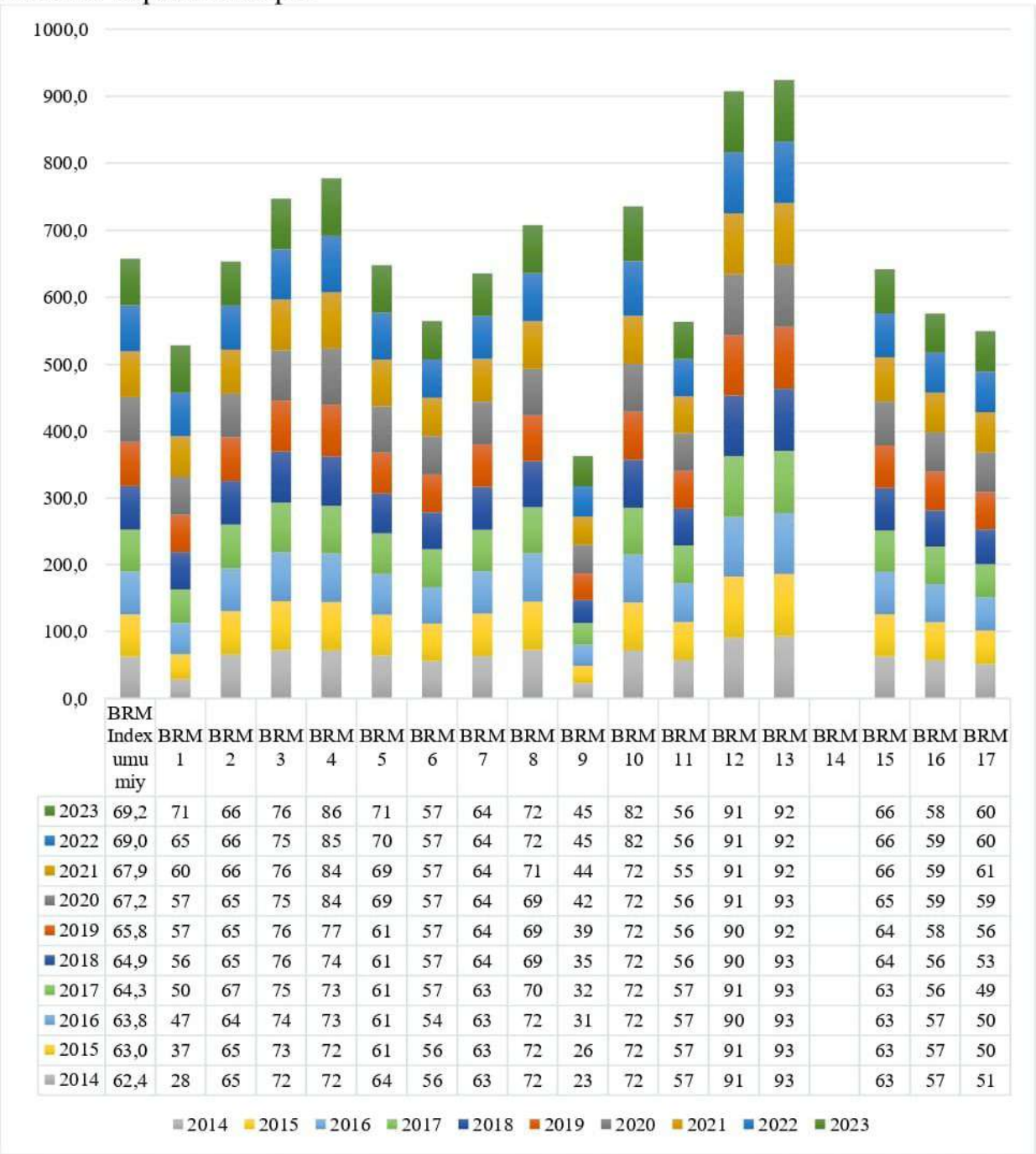
Tahlil natijasiga binoan, tashkilotlarda boshqaruv xodimlari tarkibidagi gender, madaniy, va tajriba xilma-xilligi yashil o‘sishga sezilarli ijobiy ta’sir ko‘rsatishi aniqlandi. Eng yuqori ta’sir gender xilma-xilligi va mustaqil direktorlar mavjudligida kuzatilgan. Tashkilotlarda boshqaruv xodimlari xilma-xilligi oshgan sari yashil o‘sish sur’ati avvaliga tezlashadi, ammo doimiylik nuqtasidan keyin bu ta’sir kamayadi. Xilma-xil tashkilotlarda boshqaruv xodimlari qayta tiklanadigan energiya ulushini oshirish, $CO_2$ chiqindilarini kamaytirish va ekologik investitsiyalarni jalb qilishda samarali bo‘lgan.

*Natijada iqtisodiyot nazariyasida egri chiziq gipotezasi asoslanib, unga binoan tashkilotlarda boshqaruv xodimlari tarkibidagi gender xilma-xilligi, mustaqil boshqaruvchilar mavjudligi, madaniy va tajriba xilma-xilligi orqali barqaror rivojlanishda yashil iqtisodiy o‘sishga erishilishi imkoniyatlari asoslangan.*

**Uchinchi bob “O‘zbekiston iqtisodiyotida barqaror rivojlanish ko‘rsatkichlari tahlili”** nomlanib ushbu bobda O‘zbekiston iqtisodiyotining barqaror rivojlanishga ta’sir qiluvchi asosiy omillari, hududiy va tarmoqlararo iqtisodiy tengsizlik, shuningdek, innovatsion va texnologik rivojlanish darajasi baholangan.

Bugungi kunga kelib rivojlangan davlatlar barqaror rivojlanishni ta’minlash yo‘nalishlarida, xususan ijtimoiy adolatni, gender tenglik, atrof-muhit muhofazasi, qayta tiklanuvchi energiya va texnologik innovatsiyalar bo‘yicha ijobiy natijalarni qayd etmoqda. Ammo shunga qaramasdan aksariyat davlatlarda barqaror rivojlanishga, yashil iqtisodiyotga va inklyuziv o‘sishga o‘tish aholi ko‘payishiga qaraganda sekin bormoqda. Bugungi kunda 1 kishilik kunlik energiya sarfi 2,5 kw (kilo vat)ni tashkil etayotgan bo‘lsa, texnik taraqqiyotning rivojlanishi evaziga 2100 yilda bu ko‘rsatkich 9,5 kwni tashkil etishi va bunga qo‘shimcha aholi

sonining ham ortishi evaziga dunyo bo‘ylab energiya sarfiga yillik talab 18,2 tw (trillion vat)dan 123 twga ortishi kutilmoqda[18]. Bunda qushimcha energiya ishlab chiqarishni ko‘paytirishda barqaror rivojlanishni ham ta’minlash zarurligini inobatga olsak, yashil energiyaning yoqilg‘i energiyasiga nisbatan qimmatligi va unga o‘tish qo‘shimcha investitsiyalarni taqozo etishi, rivojlanayotgan davlatlarda bu mavzuning dolzarbligini saqlab kelmoqda. Bu masalalar barqaror rivojlanishni ta’minlash siyosatini muvofiqlashtirishga qaratilgan ilmiy tadqiqotlar olib borishni taqozo etmoqda.



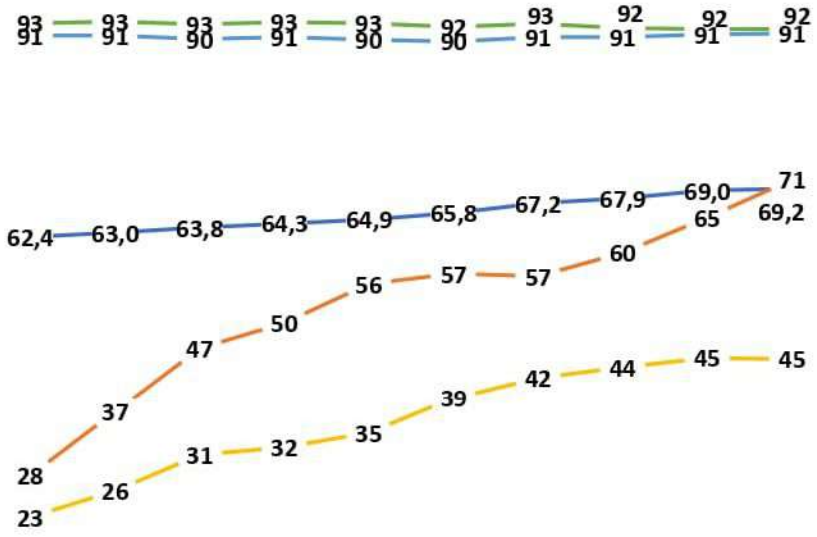

| | BRM Index umumiy | BRM 1 | BRM 2 | BRM 3 | BRM 4 | BRM 5 | BRM 6 | BRM 7 | BRM 8 | BRM 9 | BRM 10 | BRM 11 | BRM 12 | BRM 13 | BRM 14 | BRM 15 | BRM 16 | BRM 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 | 69,2 | 71 | 66 | 76 | 86 | 71 | 57 | 64 | 72 | 45 | 82 | 56 | 91 | 92 | | 66 | 58 | 60 |
| 2022 | 69,0 | 65 | 66 | 75 | 85 | 70 | 57 | 64 | 72 | 45 | 82 | 56 | 91 | 92 | | 66 | 59 | 60 |
| 2021 | 67,9 | 60 | 66 | 76 | 84 | 69 | 57 | 64 | 71 | 44 | 72 | 55 | 91 | 92 | | 66 | 59 | 61 |
| 2020 | 67,2 | 57 | 65 | 75 | 84 | 69 | 57 | 64 | 69 | 42 | 72 | 56 | 91 | 93 | | 65 | 59 | 59 |
| 2019 | 65,8 | 57 | 65 | 76 | 77 | 61 | 57 | 64 | 69 | 39 | 72 | 56 | 90 | 92 | | 64 | 58 | 56 |
| 2018 | 64,9 | 56 | 65 | 76 | 74 | 61 | 57 | 64 | 69 | 35 | 72 | 56 | 90 | 93 | | 64 | 56 | 53 |
| 2017 | 64,3 | 50 | 67 | 75 | 73 | 61 | 57 | 63 | 70 | 32 | 72 | 57 | 91 | 93 | | 63 | 56 | 49 |
| 2016 | 63,8 | 47 | 64 | 74 | 73 | 61 | 54 | 63 | 72 | 31 | 72 | 57 | 90 | 93 | | 63 | 57 | 50 |
| 2015 | 63,0 | 37 | 65 | 73 | 72 | 61 | 56 | 63 | 72 | 26 | 72 | 57 | 91 | 93 | | 63 | 57 | 50 |
| 2014 | 62,4 | 28 | 65 | 72 | 72 | 64 | 56 | 63 | 72 | 23 | 72 | 57 | 91 | 93 | | 63 | 57 | 51 |

**2-rasm. O‘zbekistonda barqaror rivojlanish maqsadlari ko‘rsatkichlari dinamikasi[19].**

[18] https://www.anthropocenemagazine.org/howmuchenergy/
[19] Muallif tomonidan ishlab chiqilgan.

Mamlakatlarning barqaror rivojlanishini hisoblashda barqaror rivojlanishning 17 ta maqsadlariga mos indekslar va sub-indekslar tanlab olingan. Har bir BRM (barqaror rivojlanish maqsadlari) bo‘yicha max 0-100 ball baholangan (2-rasmga qarang).

2014-2023-yillarda O‘zbekistonda ko‘plab BRM bo‘yicha barqarorlik ballari o‘rtacha 56-80 ballni tashkil etgan. Ammo 2014-yilda BRM1 (kambag‘allikka barham berish) va BRM9 (sanoatlashtirish, innovatsiya va infratuzilma) ijrosi mamlakatimizda o‘rtachadan ancha past 23 va 28 ballni tashkil etib 2023-yilga kelib BRM9 ijrosi 71 ballga ijobiy natijaga chiqqan bo‘lsa BRM1 ijrosi 45 ballgacha ko‘tarilib hali ham normadan salbiy natijani qayd etmoqdamiz (3-rasmga qarang).




| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| BRM Index umumiy | 62,4 | 63,0 | 63,8 | 64,3 | 64,9 | 65,8 | 67,2 | 67,9 | 69,0 | 69,2 |
| BRM1 | 28 | 37 | 47 | 50 | 56 | 57 | 57 | 60 | 65 | 71 |
| BRM9 | 23 | 26 | 31 | 32 | 35 | 39 | 42 | 44 | 45 | 45 |
| BRM12 | 91 | 91 | 90 | 91 | 90 | 90 | 91 | 91 | 91 | 91 |
| BRM13 | 93 | 93 | 93 | 93 | 93 | 92 | 93 | 92 | 92 | 92 |

**3-rasm. O‘zbekistonda ijobiy va salbiy BRM trendi[20]**

O‘zbekistonda 2014-2023-yillarda BRM ijrosi bo‘yicha eng ijobiy holatni BRM 12 (mas’uliyatli iste’mol va ishlab chiqarish) va BRM13 (iqlim o‘zgarishiga qarshi kurashish) tashkil etib, ular 91-93 ball atrofida ijobiy baholangan. Buni mas’uliyatli iste’mol bo‘yicha xalqimizning urf-odatlari, odobi bilan izohlasak, mamlakatda olib borilayotgan yashil energiyani rag‘batlantirish, Orol dengiziga

[20] Muallif tomonidan ishlab chiqilgan.

nihol ekishni kengaytirish bilan bog‘liq olib borilgan hukumat siyosati natijasida BRM 13 ijrosi nisbatan ijobiy baholangan.

O‘zbekiston aholisi yil sayin ortib bormoqda, bu esa maishiy va sanoat chiqindilarining hajmini oshirmoqda. Aholi sonining o‘sishi bilan iste’mol miqdori ham oshadi, bu esa atmosferaga chiqadigan ifloslantiruvchi moddalar ishlab chiqarilishiga bevosita ta’sir ko‘rsatadi. Ushbu gipotezaga ko‘ra keltirilgan omillar ifloslanish hajmiga sezilarli ta’sir ko‘rsatishini ko‘rsatadi, bu esa ushbu omillar asosida atrof-muhitni yaxshilash strategiyalarini ishlab chiqishni talab qiladi.

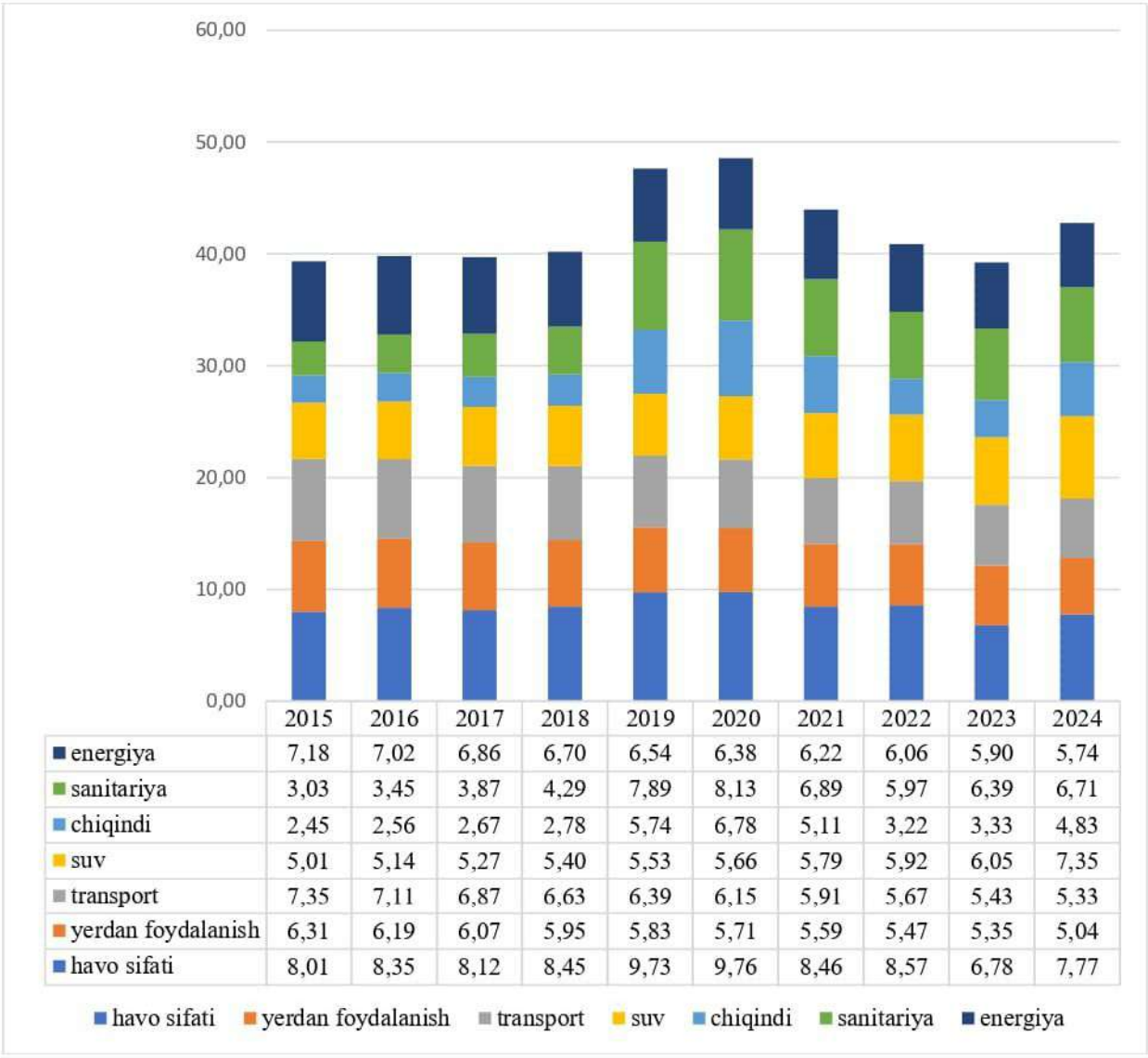
Chiqindilarni ajratish bo‘yicha Yaponiya tizimini joriy etish taklif qilingan. Chiqindi yig‘ish konteynerlarini kengaytirish zarurligi asoslangan. Xususan dushanba organik chiqindilar, seshanba plastmassalar, chorshanba qog‘oz va kartonlar, payshanba metall chiqindilar, juma shisha chiqindilarni yig‘ish va tashish mexanizmini joriy qilish asoslangan.

Chiqindilarni qayta ishlash korxonalarini soliqlardan ozod qilish yoki subsidiyalar bilan qo‘llab-quvvatlash, “Zero Waste” (nol chiqindi) tashabbusi ilgari surish, yirik kompaniyalardan chiqindilarni boshqarish bo‘yicha javobgarlik talab qilish, bir martalik plastik mahsulotlardan foydalanishni cheklash, plastik paketlar, idishlar va boshqa qadoqlash materiallaridan foydalanishni kamaytirish bo‘yicha qat’iy qonunlar qabul qilish, alternativ sifatida qayta ishlanadigan va ekologik toza qadoqlash materiallarini joriy qilishni rag‘batlantirish mexanizmi takomillashtirilgan.

Quyosh, shamol va bioenergiya kabi qayta tiklanadigan energiya manbalarini kengroq joriy qilish, elektr energiyasini ishlab chiqarishda uglerod chiqindilarini kamaytirish uchun ekologik toza texnologiyalardan foydalanish, O‘zbekistonda 2050-yilgacha elektr energiyani ishlab chiqarishda uglerod-neytral sektorni yaratish imkoniyatlarini o‘rganish bo‘yicha “yo‘l xaritasi” loyihasi uchun taklifl va tavsiyalar ishlab chiqilgan.

**4-bob “Milliy iqtisodiyotda barqaror rivojlanishni ta’minlash yo‘nalishlari va ularni istiqbolini baholash”** deb nomlanib ushbu bobda ekologik mustahkamlikning iqtisodiy o‘sishga ta’siri, tabiiy resurslardan ortiqcha foydalanishning salbiy oqibatlari, innovatsiyalar va texnologik rivojlanishning iqtisodiy o‘sishga ta’siri, savdo ochiqligining o‘rni, hukumat samaradorligi tahlil qilingan.

Yashil shaharlar indeksida umumiy O‘zbekistonni tahlil qiladigan bo‘lsak, 2015-2019 yillarda mo‘tadillikni ko‘rishimiz mumkin, bunda 100 balldan 40 ball atrofida baholangan. 2019-2020 yilga kelib yashil iqtisodiyot holati 40 ball dan 58 ballga ortgan. Bu ijobiy o‘zgarishni Kovid-19 pandemiya tadbirlarining ta’siri bilan izohlaymiz. Sababi ushbu davrda transport harakatining kamayishi va masofaviy ishlashga o‘tilganligi sababli korxonalarda energiya sarfi kamaygani $CO_2$ chiqarishni kamaytirdi va havo sifatini yaxshilanganligini ko‘rishimiz mumkin (4-rasmga qarang).




| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| energiya | 7,18 | 7,02 | 6,86 | 6,70 | 6,54 | 6,38 | 6,22 | 6,06 | 5,90 | 5,74 |
| sanitariya | 3,03 | 3,45 | 3,87 | 4,29 | 7,89 | 8,13 | 6,89 | 5,97 | 6,39 | 6,71 |
| chiqindi | 2,45 | 2,56 | 2,67 | 2,78 | 5,74 | 6,78 | 5,11 | 3,22 | 3,33 | 4,83 |
| suv | 5,01 | 5,14 | 5,27 | 5,40 | 5,53 | 5,66 | 5,79 | 5,92 | 6,05 | 7,35 |
| transport | 7,35 | 7,11 | 6,87 | 6,63 | 6,39 | 6,15 | 5,91 | 5,67 | 5,43 | 5,33 |
| yerdan foydalanish | 6,31 | 6,19 | 6,07 | 5,95 | 5,83 | 5,71 | 5,59 | 5,47 | 5,35 | 5,04 |
| havo sifati | 8,01 | 8,35 | 8,12 | 8,45 | 9,73 | 9,76 | 8,46 | 8,57 | 6,78 | 7,77 |

**4-rasm. O‘zbekistonda yashil iqtisodiyot (GCI Indeks) ko‘rsatkichlari[21]**

Rasmga ko‘ra 2021-2023 yillarda yashil iqtisodiyot ko‘rsatkichlarida pasayishni ko‘rishimiz mumkin, buni Kovid-19 pandemiya cheklovlari bekor qilinganidan so‘ng energetika sanoati va boshqa sanoat tarmoqlarida ishlab chiqarish hajmi jadal sur’atlarda o‘sganligi, aholi sonining o‘sishi va qurilish hajmining o‘sganligi bilan izohlanadi.

*Iqtisodiyotning real sektorini rag‘batlantirishga yo‘naltirilgan qayta tiklanuvchi energiya manbalari uskunalari, suv nasos stansiyalari hamda ko‘chma generatorlarni sotib olish xarajatlarining bir qismini qoplash uchun byudjetdan moliyalashtiriladigan subsidiya va taqdim etiladigan imtiyozlarning iqtisodiy samaradorligidan kelib chiqib tartibga solish taklifi asoslangan.*

Iste’molchilarning ekin maydonlarini sug‘orish uchun nasos agregatlari iste’mol qilgan elektr energiyasi qiymatini qoplash uchun subsidiya ajratish asoslandi va yo`lga qo`yildi. Subsidiya iste’molchilarga paxta xom ashyosi va

[21] GCI Indeks asosida muallif tomonidan tuzildi. muallif tomonidan tuzildi.

g‘alla ekinlarini mavjud tomchilatib, yomg‘irlatib yoki diskret sug‘orish tizimlaridan foydalangan holda sug‘orishda iste’mol qilingan elektr energiyasi qiymatining 100 foizi, paxta va g‘alla maydonlarini suvni tejaydigan sug‘orish texnologiyasidan foydalanmagan holda sug‘orishda iste’mol qilingan elektr energiyasi qiymatining 50 foizi miqdorida subsidiya ajratish taklifi va mexanizmi ishlab chiqildi.

Yashil energiyani rivojlantirish uchun xonadoniga quyosh panellarini o‘rnatgan jismoniy shaxslarga subsidiya berish asoslandi va hukumatga taklif kiritilgan. Natijada “Quyoshli xonadon” dasturi ishga tushirilib, u doirasida xonadoniga quyosh panellarini o‘rnatgan jismoniy shaxslarga quyosh paneli orqali ishlab chiqarilgan va yagona elektr energetika tizimiga uzatilgan elektr energiyasining har bir kilovatt soati uchun 1000 so‘mdan subsidiya ajratish taklifi ishlab chiqildi.

O‘zbekistonda yashil iqtisodiyotga o‘tish, atrof-muhitni muhofaza qilish, $CO_2$ chiqindilarini kamaytirish maqsadida qayta tiklanuvchi energiya manbalari, suv nasos stansiyalari va ko‘chma generatorlarni xarid qilish xarajatlarini qoplashga doir subsidiya va imtiyozlarni iqtisodiy samaradorlik asosida tartibga solish zarurati mavjud. Bu o‘z navbatida energetik xavfsizlikni mustahkamlash, ishlab chiqarish jarayonlarining uzluksizligini ta’minlash va chekka hududlarda elektr ta’minoti muammolarini bartaraf etishga qaratilgan. Bu chora-tadbirlar ishlab chiqarish tannarxini pasaytirish, raqobatbardosh mahsulot yetishtirish, eksport hajmini oshirish va mahalliy resurslardan samarali foydalanish imkonini yaratadi. Subsidiya va imtiyozlarning faqat iqtisodiy samaradorligi yuqori bo‘lgan loyihalarga yo‘naltirilishi davlat byudjetining maqsadli va natijador ishlatilishini ta’minlaydi.

## XULOSA

O‘tkazilgan ilmiy tadqiqotlar va tahlillar bizning tadqiqot ishimiz bo‘yicha quyidagi xulosalarga olib keldi:

1. Uslubiy yondashuvga ko‘ra “barqaror rivojlanish” tushunchasi mohiyati demografik-ijtimoiy o‘zgarishlarga ko‘ra ehtiyojni sifat jihatdan yanada to‘laroq qondirish, gender tengligi, ekologik talablar ustuvorligi va tabiiy resurslardan oqilona foydalanish hamda texnologik-innovatsiya va iqtisodiy mexanizmlardan samarali foydalanishga ko‘ra iqlim o‘zgarishiga moslashuvchi hamda mahalliy va global integratsiyaning chuqurlashuvining uzoq muddatli rivojlanishi asosida takomillashtirilgan.
2. Uslubiy yondashuvga ko‘ra hududning ekologik barqarorlik darajasini “yuqori darajadagi muvofiqlik” ($0<GHA\leq0,3$), “o‘rtachadan yuqori darajali muvofiqlik” ($0,3<GHA\leq0,5$), “o‘rta darajali muvofiqlik” ($0,5<GHA\leq0,7$), “past darajali muvofiqlik” ($0,7<GHA\leq1$) guruhlari oralig‘iga ko‘ra tasniflash asosida baholash asoslangan hamda ekologik izning ekologik sig‘imga nisbati barqarorlik mezonlaridan oshmasligi uchun o‘rta muddatlarga mo‘ljallangan yashil

iqtisodiyotni rivojlantirish strategiyasini amalga oshirishda ekologik barqarorlik darajasi va ulardan foydalanish samaradorligini baholash indikatorlari taklif etilgan.

3. Resursga boy mintaqalarda iqtisodiy o‘sish ko‘rsatkichlariga ta’sir etuvchi barqaror rivojlanish omillari o‘rtasidagi bog‘liqlikni ifodalovchi ekonometrik modellarga ko‘ra tabiiy resurslardan ortiqcha foydalanishning salbiy oqibatlari va ekologik mustahkamlikning ijobiy ta’siri asoslangan holda ekologik mustahkamlikni oshirish imkoniyatlari ishlab chiqilgan.

4. Iqtisodiyot nazariyasida egri chiziq gipotezasi asoslanib, unga binoan tashkilotlarda boshqaruv xodimlari tarkibidagi gender xilma-xilligi, mustaqil boshqaruvchilar mavjudligi, madaniy va tajriba xilma-xilligi orqali barqaror rivojlanishda yashil iqtisodiy o‘sishga erishilishi imkoniyatlari asoslangan.

5. Iqtisodiyotning real sektorini rag‘batlantirishga yo‘naltirilgan qayta tiklanuvchi energiya manbalari uskunalari, suv nasos stansiyalari hamda ko‘chma generatorlarni sotib olish xarajatlarining bir qismini qoplash uchun byudjetdan moliyalashtiriladigan subsidiya va taqdim etiladigan imtiyozlarning iqtisodiy samaradorligidan kelib chiqib tartibga solish taklifi asoslangan.

6. Tadqiqot davomida O‘zbekiston iqtisodiyotining barqaror rivojlanishga to‘sqinlik qiluvchi omillari, jumladan, chiqindi ishlab chiqarish, xomashyo eksportiga qaramlik va ekologik xavfsizlikning yetarli darajada ta’minlanmagani aniqlangan. Ushbu muammolarni hal qilish uchun chiqindilarni boshqarish bo‘yicha yangi ekonometrik model, transport va energetika infratuzilmasini takomillashtirishga qaratilgan yondashuvlar hamda ekologik toza texnologiyalarni joriy etish mexanizmi takomillashtirilgan.

7. Mamlakatda barqaror rivojlanishni ta’minlashda yashirin iqtisodiyotni kamaytirish bo‘yicha ilmiy tavsiyalar ishlab chiqilgan. Xususan, transport va energetika infratuzilmasida uglerod chiqindilarini kamaytirishga, jamoat transportlarida yashirin iqtisodiyotning oldini olishga qaratilgan ilmiy asoslangan yondashuvlar ishlab chiqilgan. Toshkent shahrida jamoat transportlarida elektron to‘lovga o‘tishni rag‘batlantirish chora-tadbirlari ishlab chiqilgan.

8. O‘zbekistonda yashil energiyani moliyalashtirish kraud-fondi tashkil etish asoslanib, ushbu loyihani qo‘llab quvvatlagan tadbirkorlik subyektlarini rag‘batlantirish mexanizmi ishlab chiqilgan.

9. O‘zbekistonda qayta tiklanadigan energiya manbalaridan foydalanish va ekologik toza texnologiyalarni joriy etishni intensivlashtirish bo‘yicha tavsiyalar ishlab chiqilgan.

10. Milliy iqtisodiyotda barqaror rivojlanish maqsadlari ijrosiga mas’ul organlar o‘rtasida doimiy ma’lumotlarni almashish va iqtisodiy siyosat choralarini birgalikda ishlab chiqish tizimini takomillashtirish bo‘yicha takliflar ishlab chiqilgan.

11. Milliy iqtisodiyotda barqaror rivojlanish bilan bog‘liq muammolarini aniqlash metodologiyasi takomillashtirilgan va ularni hal qilishga qaratilgan ilmiy-uslubiy taklif va amaliy tavsiyalar ishlab chiqilgan.

**SCIENTIFIC COUNCIL DSc.03 / 30.01.2021.I.16.03 FOR AWARDING SCIENTIFIC DEGREES AT TASHKENT STATE UNIVERSITY OF ECONOMICS**

**RESEARCH CENTER "SCIENTIFIC BASES AND ISSUES OF ECONOMIC DEVELOPMENT OF UZBEKISTAN" UNDER THE TASHKENT STATE UNIVERSITY OF ECONOMICS**

**KHAMDAMOV SHOH-JAKHON RAKHMAT OGLI**

# IMPROVING THE METHODOLOGY FOR ENSURING SUSTAINABLE DEVELOPMENT IN THE NATIONAL ECONOMY

**08.00.02 – Macroeconomics**
**08.00.01 – Economic Theory**

**ABSTRACT**
**of the dissertation prepared for obtaining the degree of Doctor of Science (DSc) in Economics**

**Tashkent - 2025**

**The theme of the dissertation for the degree of Doctor of Science (DSc) was registered at Higher Attestation Commission under the number B2025.1.DSc/Iqt523.**

The dissertation has been prepared at the Research Center "Scientific bases and issues of economic development of Uzbekistan" under the Tashkent State University of Economics.

The dissertation abstract is posted in three languages (Uzbek, Russian, abstract in English) is posted on the website of the Scientific Council (www.tsue.uz) and on the Information and educational portal "ZiyoNet" (www.ziyonet.uz).

| | |
|---|---|
| **Scientific Advisor:** | **Usmanov Anvar Saidmakhmudovich**<br>Doctor of Economic Sciences, Professor |
| **Official opponents:** | **Abdurakhmonov Kalandar Khodjaevich**<br>Academician, Doctor of Economic Sciences, Professor |
| | **Nasirkhodjaeva Dilafruz Sabitkhanovna**<br>Doctor of Economic Sciences, Professor |
| | **Mustafakulov Sherzod Igamberdievich**<br>Doctor of Economic Sciences, Professor |
| **Leading organization:** | **Samarkand State University** |

The defense of the dissertation will take place on "19" 08 2025 at 10:00 hours at a meeting of the Scientific Council DSc.03/30.01.2021.I.16.03 for awarding academic degrees at the Tashkent State University of Economics. Address: 100066, Tashkent, Islam Karimov St., 49. Tel.: (99871) 239-28-72, Fax: (99871) 239-43-51; e-mail: info@tsue.uz

The dissertation can be found at the Information Resource Center of the Tashkent State University of Economics (registration number 1717). Address: 100066, Tashkent, Islam Karimov Street, 49. Tel.: (99871) 239-28-72; fax: (99871) 239-43-51.

The dissertation abstract was sent out on "04" 08 2025.

(mailing protocol register No. 80 dated "04" 08 2025).

**S.K. Xudoykulov**
Chairman of the Scientific Council for awarding academic degrees, doctor of economic sciences, professor

**B.E. Mamarakhimov**
Scientific secretary of the Scientific Council for awarding academic degrees, PhD in economic sciences, professor

**U. V. Gafurov**
Chairman of the Scientific seminar under the Scientific Council for awarding scientific degrees, doctor of economics, professor

## INTRODUCTION (Abstract of the Doctor of Science (DSc) dissertation)

**The relevance and necessity of the dissertation topic.** In the context of qualitative changes in the global economy, especially the dominance of digital and artificial intelligence technologies, ensuring social and environmental sustainability in economic growth through a "green economy" and "green energy" is becoming increasingly important. According to the World Bank, "global climate change will cause a 3.3% reduction in global gross domestic product by 2050. Carbon emissions from fuel and energy are projected to reach approximately 39 billion tons of carbon dioxide ($GtCO_2$) in 2025. They are expected to continue to decline in the coming years, reaching 37.4 $GtCO_2$ by 2030, thanks to green energy sources being introduced at the national level"[1]. Today, in the development trend of the world economy, the rapid transition to a "green economy" and "green energy" is considered one of the urgent problems in the sustainable development of national economies.

In the framework of research in macroeconomic areas in the world, projects dedicated to ensuring economic, social and environmental stability in harmony are being implemented as a priority. In this regard, research on the following topics is of particular importance: the development (improvement) of effective mechanisms for the accelerated transition to a "green economy" and "green energy"; socio-economic development, taking into account social problems such as global environmental threats, inequality and poverty, requires the need to improve the methodological foundations of ensuring macroeconomic stability.

The essence of the reforms being implemented to build a new Uzbekistan is aimed at ensuring a decent quality of life for the population, and in this regard, the harmonious provision of social, economic and environmental stability is of great importance. The following tasks have been set: "...Reducing the level of poverty of the population in all areas, ensuring a healthy lifestyle and promoting the well-being of people of all ages, ensuring gender equality, ensuring universal access to affordable, reliable, sustainable and modern energy sources for all, creating a sustainable infrastructure, and taking urgent measures to combat climate change and its consequences" [2]. In order to ensure the implementation of these tasks, it is appropriate to expand the scope of research aimed at improving its scientific, theoretical and methodological foundations, along with the study of practically important problems of sustainable development of the national economy.

Decrees of the President of the Republic of Uzbekistan No. PF-158 dated September 11, 2023 "On the Strategy of Uzbekistan - 2030", No. PF-60 dated January 28, 2022 "On the Development Strategy of New Uzbekistan for 2022-2026", Resolution No. PQ-4477 dated December 4, 2019 "On Approval of the Strategy of the Transition of the Republic of Uzbekistan to a Green Economy for 2019-2030", Resolution of the Cabinet of Ministers No. 83 dated February 21,

[1] https://www.statista.com/statistics/1385434/

[2] Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 83 dated 21.02.2022 "On additional measures to accelerate the implementation of national goals and objectives in the field of sustainable development for the period up to 2030".

2022 "On Additional Measures to Accelerate the Implementation of National Goals and Objectives in the Field of Sustainable Development for the Period Until 2030" and this This dissertation research serves to a certain extent in the implementation of the tasks set out in other regulatory documents in the field.

**Compliance of the research with the priority areas of the development of science and technology of the republic.** This research was carried out in accordance with the priority area of the development of science and technology of the republic I. "Spiritual, moral and cultural development of a democratic and legal society, the formation of an innovative economy".

**A review of foreign scientific research on the topic of the dissertation[3].** Scientific research on the coordination of sustainable development in the national economy is carried out by leading higher education institutions, research centers and global organizations, including the United Nations Sustainable Development Group, World Bank, United Nations Development Programme, United Nations Environment Programme, International Institute for Environment and Development (UK), Stockholm Environment Institute (Sweden), The Earth Institute – Columbia University (USA), The World Resources Institute (USA), The International Union for Conservation of Nature (Switzerland), The Global Green Growth Institute (South Korea), The Climate Group (UK), The International Renewable Energy Agency (UAE), The Intergovernmental Panel on Climate Change (Switzerland), The International Institute for Sustainable Development (Canada), The Global Footprint Network (Italy), The Center for International Forestry Research (Indonesia), The Potsdam Institute for Climate Impact Research (Germany), The Basque Centre for Climate Change (Spain), The European Environment Agency (Denmark), Massachusetts Institute of Technology (USA), University of California (USA), Harvard University (USA), Oxford University (UK), Cambridge University (UK), ETH Zurich — Institute of Environmental Engineering (Switzerland), Lund University (Sweden), Technical University of Munich (Germany), Delft University of Technology (Netherlands), National University of Singapore (Singapore), University of Tokyo (Japan), Beijing Tsinghua University (China), University of Melbourne (Australia), University of Cape Town — African Climate & Development Initiative (South Africa), McGill University (Canada), University of Sydney (Australia), Moscow State University (Russia), Moscow Energy Institute (Russia), Institute of Forecasting and Macroeconomic Research under the Ministry of Economic Development and Poverty Reduction of the Republic of Uzbekistan, National University of Uzbekistan, National Research Institute of Ecology and Environmental Protection of Uzbekistan, and Tashkent State University of Economics.

[3] Review of foreign literature on the topic of the dissertation, sciencedirect.com, scopus,com, unsdg.un.org, worldbank.org, undp.org, unep.org, iied.org, sei.org, earth.columbia.edu, wri.org, iucn.org, gggi.org, theclimategroup.org, irena.org, ipcc.ch, iisd.org, footprintnetwork.org, cifor.org, pik-potsdam.de, bc3research.org, eea.europa.eu, mit.edu, berkeley.edu, harvard.edu, ox.ac.uk, cam.ac.uk, env.ethz.ch, lu.se, tum.de, tudelft.nl, nus.edu.sg, u-tokyo.ac.jp, tsinghua.edu.cn, unimelb.edu.au, climate.uct.ac.za, mcgill.ca, sydney.edu.au, msu.ru, Prepared based on mpei.ru, ekonomics.uz, nuu.uz, ecology.uz, tsue.uz and other sources.

Research conducted in the world on improving the methodology and developing methodological and practical aspects of sustainable economic development, including the following scientific results: methodological recommendations on ensuring sustainable development were developed on scientific-methodological, organizational-economic, institutional, including climate change and $CO_2$ reduction (Intergovernmental Panel on Climate Change); methodological issues on the efficient use of natural resources and the development of a green economy were based (World Resources Institute); scientific and practical proposals were prepared on the widespread introduction of renewable energy sources and increasing energy efficiency (International Renewable Energy Agency); recommendations were developed on the organization of the methodological foundations of environmental protection and ensuring ecological sustainability in accordance with the green economy, proposals were made on their improvement (United Nations Environment Programme); proposals were developed on the formation of global climate policy and effective adaptation measures at the national level (Potsdam Institute for Climate Impact Research); methodological and practical recommendations on reducing carbon emissions and environmentally sustainable development of cities were based (Stockholm Environment Institute); recommendations have been developed on transboundary issues in water resources management and ensuring water supply sustainability (The Global Green Growth Institute); the methodology for biodiversity conservation and assessment of ecosystem services has been improved (The International Union for Conservation of Nature); scientific and practical recommendations have been based on sustainable economic growth and poverty reduction, ensuring macroeconomic stability based on the interaction of fiscal and monetary policy, the transition to a green economy and efficient use of resources (Institute for Macroeconomic and Regional Studies, Uzbekistan).

In the scientific, theoretical and practical areas of sustainable development of the world economy and national economies, the following scientific research is of priority importance: in the context of the rapid development of digital and artificial intelligence technologies, research is being conducted on a large scale to improve the methodological foundations of employment and macroeconomic stability.

**The level of understanding of the problem.** Sustainable development issues have always been the focus of scientific research by foreign scientists[4]. In

[4] Brundtland G. H. Gro Harlem Brundtland. – Reino unido: Oxford University Press, 1987.; Daly H. E. Ecological economics and sustainable development, selected essays of Herman Daly //Ecological Economics and Sustainable Development, Selected Essays of Herman Daly. – Edward Elgar Publishing, 2007.; Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. Science, 325(5939), 419-422.; Giovanardi, M., Konstantinou, T., Pollo, R., & Klein, T. Internet of Things for building façade traceability: A theoretical framework to enable circular economy through life-cycle information flows. Journal of Cleaner Production, 382, 135261, 2023.; Klapper, R. G., & Fayolle, A. A transformational learning framework for sustainable entrepreneurship education: The power of Paulo Freire's educational model. The International Journal of Management Education, 21(1), 100729, 2023.; Sumarsono, N., Kasali, R., & Balqiah, T. E. Circular business model, technology innovation and performance: A strategic-based theoretical framework in the Indonesian energy transition. Renewable Energy Focus, 45, 259-270, 2023.; Al-Emran, M. Beyond technology acceptance: Development and evaluation of technology-environmental, economic, and social sustainability theory. Technology in Society, 75, 102383, 2023.; Babkin, A., Shkarupeta, E., Tashenova, L., Malevskaia-Malevich, E., & Shchegoleva, T. Framework for assessing the sustainability of ESG performance in industrial cluster ecosystems in a circular economy. Journal of Open

particular, foreign scientists such as[5] M.Giovanardi, T.Konstantinou, R.Pollo, T.Klein, R.G. Klapper, A.Fayolle, N.Sumarsono, R.Kasali, T.E.Balqiah, M.Al-Emran, A.Babkin, E.Shkarupeta, L.Tashenova, E.Malevskaia-Malevich, T.Shchegoleva, S.Li, J.Ma, F.Xu, L.Wei, D.He, E.Cagno, M.Negri, A.Neri, M.Giambone, B. Kump, J.Wang, L.Qiao, G.Zhu, K.Di, X.Zhang, S.Han, H.Ramkissoon, E.You, M. Kim have carried out scientific research in this area. In the countries of the Commonwealth of Independent States, J.Y.Bakayeva, E.N.Shchegoleva, A.V.Shuvaev, A.P.Sokolov, O.M.Subbotina, I.N.Krakovskaya, G.B.Kleiner, V.G.Rodionov, I.P.Vorobyeva, A.B.Mirsayidov, A.Ch.Sattarov, R.A.Kuliyev conducted scientific research.

Some issues of ensuring sustainable development of the national economy in Uzbekistan Abdurakhmonov K., Gulyamov S., Ulmasov A., Imamov V., Usmanov A.S., Mustafakulov Sh.I., Mahmudov N., Sharifhodzhaev M., Shodmonov S., Alimov R. Kh., Jo‘rayev T.T., Ruzmetov B., Bekmurodov A., Umurzakov B. K., Gafurov U., Zhuzbaev A. O., Akbarov N. G., Salimov B., Rasulev A.F., Voronin S.A., Mamarakhimov B.E., Sultanov D., Makhmudov N., Khudoykulov S., Ismatov Kh., Isayev F., Khudoykulov K., Abrorov S., Akhmedieva A., Kadirov A., Mamurov B., Musabekov U., Nasirhodjaeva D., Rakhimova M., Abdurakhmanova G.K., Irmatova A. B., Akbarova M.I., Abdullaev S., Khajiev B., Mambetjanov Q., Khashimova N., Mamatov A., Muradova N., Berkinov B., Do‘schanov T., Ayubdzhanov A., Askarova M., Utanov B., Jumaev N.H., Rakhmonov D.A. and other scientists[6] have found their

---

Innovation: Technology, Market, and Complexity, 9(2), 100071, 2023.; Li, S., Ma, J., Xu, F., Wei, L., & He, D. Fundamental principles and environmental applications of electrochemical hydrogen peroxide production: A review. Chemical Engineering Journal, 452, 139371, 2023.; Cagno, E., Negri, M., Neri, A., & Giambone, M. One framework to rule them all: an integrated, multi-level and scalable performance measurement framework of sustainability, circular economy and industrial symbiosis. Sustainable Production and Consumption, 35, 55-71, 2023.; Kump, B. Lewin’s field theory as a lens for understanding incumbent actors’ agency in sustainability transitions. Environmental Innovation and Societal Transitions, 46, 100683, 2023.; Wang, J., Qiao, L., Zhu, G., Di, K., & Zhang, X. Research on the driving factors and impact mechanisms of green new quality productive forces in high-tech retail enterprises under China’s Dual Carbon Goals. Journal of Retailing and Consumer Services, 82, 104092, 2025.; Han, S., Ramkissoon, H., You, E., & Kim, M. J. Support of residents for sustainable tourism development in nature-based destinations: Applying theories of social exchange and bottom-up spillover. Journal of Outdoor Recreation and Tourism, 43, 100643, 2023.

[5] Бакаева Ж. Ю., Щеголева Э. Н. Экономика устойчивого развития. – 2009.; Шуваев А. В. Особенности развития устойчивой социально-экономической системы //Проблемы современной экономики (Новосибирск). – 2014. – №. 18. – С. 49-53.; Соколов А. П., Субботина О. М. Концептуальные основы формирования устойчивой региональной политики //Сегодня и завтра Российской экономики. – 2015. – №. 72. – С. 37-43.; Краковская И. Н. Концепция обеспечения устойчивой конкурентоспособности промышленных кластеров России: основные положения //Экономика, предпринимательство и право. – 2023. – №. 2.; Клейнер Г. Б. Системная экономика как платформа развития современной экономической теории //Вопросы экономики. – 2013. – Т. 6. – С. 4-28.; Родионов В. Г. Моделирование устойчивой динамики развития социально-экономических систем глобальной экономики //Менеджмент в России и за рубежом. – 2009. – №. 1. – С. 10-14.; Воробьева И. П. Устойчивость экономики и проблемы ее обеспечения в современной России //Вестник Томского государственного университета. Экономика. – 2012. – №. 1 (17). – С. 17-25.; Мирсаидов А. Б. Тенденция развития торгово-экономических отношений Республики Таджикистан на пространстве СНГ //Науковий вісник Дипломатичної академії України. – 2017. – №. 24 (3). – С. 54-60.; Саттаров А. Ч. Проблемы и перспективы развития экономики Казахстана. – 2018.; Кулиев Р. А. Глобализация мировой экономики и Азербайджан //Баку. – 2011. – Т. 20011. – С. 320.

[6] Abdurahmonov K. H., Imamov V. Effective use and management of labor potential in Uzbekistan. – T.: 2008.; Saidakhror G. The Impact of Artificial Intelligence on Higher Education and the Economics of Information Technology. International Journal of Law and Policy,2(3), 1-6. – 2024.; Xudoyqulov S., Ismatov X. O‘zbekistonda soliq siyosati strategiyasi va taktik yo’nalishlarini takomillashtirish masalalari. TISU ilmiy tadqiqotlari xabarnomasi,

reflection in their scientific research.

The above studies include some studies examining the impact of diversity of management personnel, environmental literacy in organizations on sustainable economic growth, in particular on ensuring green economic growth, natural resources, institutional quality, innovation and trade on economic growth, but there are few studies that include the concept of environmental sustainability as a key factor in sustainable economic development. It is measured as the ecological capacity, which reflects the ability of ecosystems to provide services and

---

1(2), 37-46. – 2023.; Улмасов А. Оила иқтисоди // Т.: «Мехнат. – 1998.; Усманов А. С. Способы пропорционального развития экономической системы. Инновационная экономика: перспективы развития и совершенствования, (8 (34)), 342-347. – 2018.; Mustafakulov S. Analysis of available methods of analyzing socio-economic and innovation potential of territories //Nordic_Press. – 2024. – Т. 1. – №. 0001.; Шарифходжаев М. Формирование открытого гражданского общества в Узбекистане. Т.: Издательский дом «Мир экономики и права. – 2002.; Shodmonov S., Alimov R. X., Jo'rayev T. T. Iqtisodiyot nazariyasi. Toshkent, "Moliya" nashriyoti. – 2002.; Maxmudov N. M. va boshqalar. Iqtisodiy o'sish modellari. O'quv qo'llanma. T.: Ekonomika. – 2016.; Ruzmetov B. et al. Formation of supporting points for production growth based on diversification of the regional industry. E3S Web of Conferences. – EDP Sciences, 2023. – Т. 449. – S. 01001.; Bekmurodov A. The impact of transformation processes on the activity of commercial banks. Web of Synergy: International Interdisciplinary Research Journal, 2(6), 194-197. – 2023.; Umurzakov B. K. State regulation of social partnership relations in small business, 100-102. – 2013.; Gafurov U., Juzbaev A. O., Akbarov N. G. Improving the mechanism for financing activities of small businesses in digital economy: in case of the Republic of Karakalpakstan. In Proceedings of the 6th International Conference on Future Networks & Distributed Systems (pp. 223-230). – 2022.; Salimov B. Dynamics and features of development of small and private entrepreneurship in Uzbekistan. Arxiv nauchnых issledovaniy, (14). – 2020.; Rasulev A. F., Voronin S. A., Mamarakhimov B. E. Reform of State-Owned Enterprises–New Threats and New Opportunities for the Development of Uzbekistan's Economy. Economy: strategy and practice, 17(3), 195-209. – 2022.; Sultonov D. O'zbekiston iqtisodiyoti modernizatsiyasi, barqaror iqtisodiyot va jahon mamlakatlari bilan xalqaro hamkorlik masalalari. Nordic_Press, 3(0003). – 2024.; Makhmudov N. M. va boshqalar. Iqtisodiy o'sish modellari. O'quv qo'llanma. T.: Ekonomika. – 2016.; Isayev F. Soliq yukini aniqlash metodikasini takomillashtirish. Iqtisodiyot va ta'lim, (6), 86-91. – 2021.; Khudoykulov K. et al. The role of environmental social and governance in achieving sustainable development goals: evidence from ASEAN countries. Economic research-Ekonomska istraživanja, 36(1), 170-190. – 2023.; Abrorov S. et al. Environmental innovations, energy innovations, governance, and environmental sustainability: Evidence from South and Southeast Asian countries. Resources Policy, 82, 103556. – 2023.; Akhmedieva A., Kadirov A., Mamurov B., Musabekov U. Improving Investment Strategy for the Economic Development of Uzbekistan. Current Dynamics in Business and Economics: Theoretical Approaches and Empirical Discoveries, 245. – 2023.; Nasirxodjaeva D., Raximova M. Toshkent shahri barqaror rivojlanishida yuzaga kelishi mumkin bo'lgan ekologik muammolar tahlili. "Milliy iqtisodiyotni isloh qilish va barqaror rivojlantirish istiqbollari" respublika ilmiy-amaliy konferensiyasi materiallari to'plami. – 2023.; Kalandarovna A. G. Effective regulation of employment in small business. American Journal of Science and Technologies, 47. – 2015.; Irmatova A. B., Akbarova M. I. Impact of digital technologies on women's employment. In International Conference on Next Generation Wired/Wireless Networking (pp. 290-298). Cham: Springer Nature Switzerland. – 2022.; Abdullayev S., Xajiyev B., Mambetjanov Q. O'zbekistonning ijtimoiy-iqtisodiy rivojlanish strategiyasi. Arxiv nauchnых issledovaniy, (10). – 2020.; Khashimova N., Buranova M. Comparative Analysis of Machine Learning Algorithms for Inflation Rate Classification and Economic Trend Forecasting. In Proceedings of the 7th International Conference on Future Networks and Distributed Systems (pp. 274-282). – 2023.; Mamatov A., Ermo'minov I. Institutsional islohotlar sharoitida mamlakatni moliyaviy-iqtisodiy xavfsizligini ta'minlash masalalari //Yashil iqtisodiyot va taraqqiyot. – 2024. – Т. 1. – №. 4.; Muradova, N. (2016). Small scale business potential factor analysis and forecast of an increase in Uzbekistan. SAARJ Journal on Banking & Insurance Research, 5(3), 19-29.; Berkinov, B., Dustmurodov, G., Ahmedov, U., Mirzaev, S., Sattorov, O., & Smanova, I. (2022, May). Food Security of the Republic of Uzbekistan and Its State After the Pandemic. In International Scientific Conference on Agricultural Machinery Industry "Interagromash"" (pp. 3110-3116). Cham: Springer International Publishing.; Doschanov, T., Chuponov, S., Ataev, J., Aliyeva, G., & Sapayeva, N. (2023). Role of educational services in innovative and sustainable development of region. In E3S Web of Conferences (Vol. 449, p. 07002). EDP Sciences.; Asqarova M. T. Inklyuziv o'sishni qo'llab-quvvatlashning xorijiy mamlakatlar tajribasi //Economics and Innovative Technologies. – 2024. – Т. 12. – №. 6. – S. 94-101.; Quvondiqovich U. B. Advanced foreign experiments in statistical research of the effectiveness of the agrarian sector and directions for their use at local levels //Multidisciplinary Journal of Science and Technology. – 2024. – Т. 4. – №. 2. – S. 28-32.; Jumaev N. H., Rakhmonov D. A. Improving Funding for Higher Education Institutions in Uzbekistan. Education in Central Asia: A Kaleidoscope of Challenges and Opportunities, 93-107. – 2020.

resources that are essential for human well-being and livelihoods. However, most existing studies, especially in resource-rich countries, ignore or underestimate the role of ecological sustainability in influencing economic performance and sustainability. Therefore, this study contributes to filling the research gap in the existing literature with empirical evidence and analysis, which examines how ecological sustainability interacts with other variables such as natural resources, institutional quality, innovation and trade and affects sustainable development. This study serves as a basis for developing scientific and methodological aspects of this issue, and for developing practical proposals and recommendations for enhancing the sustainable development of national economies based on the study of the influence of factors and sectors.

**The relationship between the dissertation research and the scientific research plans of the scientific institution where the dissertation was completed.** This research work was carried out within the framework of the fundamental project "Methodological foundations of the transformation of the system of state regulation of the national economy" under the number FZ-5421033210 in accordance with the research plan of the Scientific Research Center "Scientific Foundations and Problems of the Development of the Economy of Uzbekistan" under the Tashkent State University of Economics.

**The purpose of the research** is to develop proposals and recommendations for improving the methodology for sustainable development of the national economy.

**Research goals:**

improving the conceptual foundations by studying the essence and necessity of sustainable development in the national economy;

improving the scientific and methodological aspects of ensuring sustainable development in the national economy;

enriching the theoretical and methodological aspects of modern macroeconomic analysis and modeling methods in ensuring sustainable development in the national economy;

analyzing the state of sustainable development in Uzbekistan and the practice of coordinating sustainable development policies;

studying the state of transition to a green economy in Uzbekistan and the level of pollutants emitted into the atmosphere;

conducting an econometric analysis of the interaction of sustainable development factors and drawing appropriate conclusions;

developing scientific and methodological proposals and practical recommendations aimed at identifying and solving problems related to sustainable development in the national economy.

**The object of the study** is the spheres of activity related to the sustainable development of the national economy in the Republic of Uzbekistan.

**The subject of the study** is the economic and social relations arising in the process of implementing the policy of sustainable development of the national economy.

**Research methods.** In the process of the study, such methods as scientific abstraction, induction and deduction, structural and comparative analysis,

economic and mathematical modeling, empirical and econometric analysis, expert assessment, correlation and regression analysis were used.

**The scientific novelties** of the research are as follow:

according to the methodological approach, the essence of the concept of "sustainable development" is based on the long-term development of a more qualitatively complete satisfaction of needs in response to demographic and social changes, gender equality, priority of environmental requirements and rational use of natural resources, as well as adaptation to climate change and deepening of local and global integration, based on the effective use of technological and innovative and economic mechanisms;

according to the methodological approach, the level of ecological sustainability of the region is assessed based on the classification of the groups "high level of compatibility" ($0<GHA\leq0.3$), "higher than average level of compatibility" ($0.3<GHA\leq0.5$), "medium level of compatibility" ($0.5<GHA\leq 0.7$), "low level of compatibility" ($0.7<GHA \leq 1$), and indicators for assessing the level of ecological sustainability and the efficiency of their use in implementing the medium-term green economy development strategy are proposed so that the ratio of the ecological footprint to the ecological capacity does not exceed the sustainability criteria;

according to econometric models that express the relationship between sustainable development factors affecting economic growth indicators in resource-rich regions, opportunities for increasing ecological sustainability are developed based on the negative consequences of overuse of natural resources and the positive impact of ecological sustainability;

based on the curve hypothesis in economic theory, according to which the possibilities of achieving green economic growth in sustainable development through gender diversity in the composition of management personnel, the presence of independent managers, and cultural and experience diversity in organizations are based;

a proposal to regulate, based on the economic efficiency of subsidies and benefits provided to cover part of the costs of purchasing renewable energy equipment, water pumping stations, and portable generators, aimed at stimulating the real sector of the economy.

**The practical results** are as follows:

proposals have been developed to improve the system of constant information exchange and joint development of economic policy measures between bodies responsible for the implementation of sustainable development goals in the national economy;

proposals and recommendations have been developed to ensure environmental sustainability;

scientific and practical proposals have been made on the methodological foundations of the implementation of sustainable development elements;

proposals have been developed to improve institutional mechanisms for coordinating sustainable development policies in the national economy.

**Reliability of research results.** The reliability of the scientific results obtained in the dissertation research is based on the appropriateness of the

methodological approaches and methods used in the work, the fact that the information base is obtained from official sources, and the implementation of conclusions, proposals, and recommendations into practice.

**Scientific and practical significance of the research results.** The scientific significance of the research results is determined by the fact that they serve to improve, develop and enrich the methodology of sustainable development in the national economy in accordance with modern requirements and the goals of economic liberalization.

The practical significance of the research results is explained by the fact that the developed proposals and recommendations can be used in the development and implementation of decisions, programs and action plans adopted by the National Statistics committee of the Republic of Uzbekistan, the Ministry of Economy and Finance, the Ministry of Ecology, Environmental Protection and Climate Change, the Agency for Waste Management and Circular Economy Development to further improve the methodology of sustainable development, as well as in the preparation of textbooks, curricula and methodological manuals on the subjects of "Economic Theory", "Green Economy", "Macroeconomics".

**Implementation of research results.** Based on the results obtained on improving the methodology for sustainable development of the national economy:

according to the methodological approach, the essence of the concept of "sustainable development" is to more fully meet the needs in terms of quality due to demographic and social changes, gender equality, priority of environmental requirements and rational use of natural resources, as well as adaptation to climate change and the long-term development of deepening local and global integration, theoretical conclusions and methodological recommendations on its improvement were used in the preparation of the textbook "Treasury management" recommended for students of undergraduate programs 5230600 - "Finance and financial technologies" and 5231300 - "Budget control and treasury" (Order of the Rector of Tashkent State University of Economics No. 211 dated June 26, 2023). This scientific result served to expand the students' ability to fully understand the concept of sustainable development in harmony with its goals;

According to the methodological approach, the level of ecological sustainability of the territory is assessed based on the classification of the groups “high level of compatibility” ($0<GHA\leq0.3$), “higher than average level of compatibility” ($0.3<GHA\leq0.5$), “medium level of compatibility” ($0.5<GHA\leq 0.7$), “low level of compatibility” ($0.7<GHA\leq 1$) and the proposal on indicators for assessing the level of ecological sustainability and the efficiency of their use in implementing the medium-term green economy development strategy so that the ratio of the ecological footprint to the ecological capacity does not exceed the sustainability criteria. In the development of the Law of the Republic of Uzbekistan “On the State Budget of the Republic of Uzbekistan for 2025” dated 24.12.2024 No. ZRQ-1011 (Resolution of the Committee on Budget and Economic Issues of the Senate of the Oliy Majlis of the Republic of Uzbekistan for 2025) Reference No. 05/1051 dated March 12) and 5230100 – “Economics” were used in the preparation of the textbook “Introduction to economic policy” for students of the bachelor's degree program (Order of the Rector of the Tashkent State

University of Economics dated June 26, 2023 No. 212). This proposal served to a certain extent to increase the accuracy of assessing the level of ecological sustainability of regions and to expand the opportunities for students to use the methodology of ecological sustainability in practical and theoretical activities in accordance with modern requirements.

The proposal on the possibilities of increasing ecological sustainability, based on the negative consequences of excessive use of natural resources and the positive impact of ecological sustainability, was used in the development of the Law "On the State Budget of the Republic of Uzbekistan for 2025" (Reference of the Committee on Budget and Economic Issues of the Senate of the Oliy Majlis of the Republic of Uzbekistan dated March 12, 2025 No. 05/1051). The proposal served to a certain extent to scientifically substantiate the active use of incentives for the transition to green energy and the paths of transition to such an economy;

The proposal on the possibilities of achieving green economic growth in sustainable development through gender diversity in the composition of management personnel, the presence of independent managers, cultural and experience diversity in organizations is included in the Law "On the State Budget of the Republic of Uzbekistan for 2025" (Reference of the Committee on Budget and Economic Issues of the Senate of the Oliy Majlis of the Republic of Uzbekistan dated March 12, 2025 No. 05/1051) and 5230600 – "Finance and financial technologies" and 5231300 – "Budget control and treasury" was used in the preparation of the textbook "Treasury management" for students of the undergraduate program (Order of the Rector of Tashkent State University of Economics No. 211 dated June 26, 2023). The proposal served to a certain extent to expand the ways to achieve green economic growth and improve the quality of education by improving the quality of practical and theoretical developments;

The proposal to regulate, based on the economic efficiency of subsidies and benefits provided to cover part of the costs of purchasing renewable energy equipment, water pumping stations and portable generators aimed at stimulating the real sector of the economy, was included in the Law "On the State Budget of the Republic of Uzbekistan for 2025" (24.12.2024, ORQ-1011) (Reference of the Committee on Budget and Economic Issues of the Senate of the Oliy Majlis of the Republic of Uzbekistan dated March 12, 2025 No. 05/1051). The implementation of this proposal has to some extent served to expand the opportunities for encouraging and scaling up the transition to green energy in ensuring a green economy in the country.

**Approbation of research results.** The results of the dissertation research were discussed at 4, including 2 republican and 2 international scientific and practical conferences.

**Publication of research results.** A total of 35 scientific works on the topic of the dissertation, including 1 monograph, 12 articles in national scientific journals, 22 articles in foreign scientific including Scopus journals were published.

**Structure and volume of the dissertation.** The dissertation consists of an introduction, 4 chapters, conclusion, list of used literature and applications. The total volume of the dissertation is 223 pages.

## MAIN CONTENT OF THE DISSERTATION

**The introduction** establishes the relevance and necessity of the dissertation topic, formulates the purpose and main objectives of the research, the object and subject of the research, indicates its connection with the priority areas of development of science and technology of the republic, describes scientific innovation and emphasizes the practical results of the research, the scientific and practical significance of the results obtained, provides information on the implementation of the research results, published works and the structure of the dissertation.

**The first chapter** of the dissertation is titled as **"Theoretical and practical basis of ensuring sustainable development of the national economy".** This chapter examines theories of sustainable development, principles of economic, social and environmental sustainability, as well as theoretical foundations for the sustainable development of the national economy.

According to the World Bank, "sustainable economic development" is a multifaceted concept that encompasses not only economic growth, but also social equity and environmental protection[7]. Achieving sustainable economic development requires balancing the use of natural resources with maintaining ecological sustainability, which is the ability of ecosystems to absorb disturbances and maintain [8]their functions and services. The theoretical part analyzes the definitions of "sustainable development" (see Table 1).

Since the follow definitions do not fully reflect the goals of sustainable development, the author studied the above definitions of sustainable development and, taking into account its shortcomings, developed a definition as follows: *"according to the methodological approach, the essence of the concept of "sustainable development" is based on the long-term development of a more qualitatively complete satisfaction of needs in response to demographic and social changes, gender equality, priority of environmental requirements and rational use of natural resources, as well as adaptation to climate change and deepening of local and global integration, based on the effective use of technological and innovative and economic mechanisms".*

Ecological sustainability, which is essential for human well-being and survival, underpins essential services such as food, water, energy, health and security[9]. However, it is facing threats from climate change, biodiversity loss, land degradation, pollution and overexploitation of resources[10]. Ecosystem resilience, defined as the ability of an ecosystem to withstand and recover from disturbances, including climate change, pests and diseases, is essential for sustainable economic development. Thriving ecosystems provide a variety of essential goods and

---

[7] World Bank, 2019. World Development Report 2020: Trading for Development in the Age of Global Value Chains. The World Bank .

[8] Folke, C., Polasky, S., Rockstrom, J., Galaz, V., Westley, F., Lamont, M., meat etc., 2021. Our future in the Anthropocene biosphere. Ambio 50, 834–869 .

[9] Perrings, C., 1998. Introduction: resilience and sustainability. Environ. Dev. Econ. 3 (2), 221–262 .

[10] Perrings, C., 2006. Resilience and sustainable development. Environ. Dev. Econ. 11 (4), 417–427

services, including food, water, clean air, medicines and recreational opportunities[11].

**Table 1.**

**Analysis of definitions of "sustainable development"[12]**

| Source | Sustainable development | Different aspects |
|---|---|---|
| Brundtland G.H. (1987) | A former Prime Minister of Norway, she produced the Brundtland Report, which popularized the concept of "Sustainable Development" in 1987. The report defined sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." | The social aspects of sustainable development are not sufficiently covered |
| A. Usmanov (2020) | Sustainable development is the quantitative and qualitative growth of GDP, provided by renewable natural, production and labor factors . | The social and environmental aspects of sustainable development are not sufficiently covered |
| Thomas, (2015) | Sustainability means that human activities meet needs without depleting resources. | the needs of future generations have not been taken into account |
| Federal Law of the Russian Federation No. 78-FZ of June 19, 1996 "On the Fundamentals of State Regulation of Socio-Economic Development in the North of the Russian Federation", Article 1. | Sustainable development is the harmonious development of production, the social sphere, the population, and the natural environment. | The role of technological progress and innovation has been overlooked. Important social aspects such as gender equality and the promotion of social justice are not highlighted. |
| Robert, Kates W.; Parris, Thomas M.; Leiserowitz, Anthony A. (2005) | It is about having a society where living conditions and resources meet human needs without compromising the integrity of the planet . | Gender issues and social justice are not fully covered. |
| Mensah, Justice (2019) | Sustainable development is a society in which living conditions and resources meet human needs without compromising the integrity of the planet. | It is not shown how innovation and technology can contribute to sustainable development. |
| Basiago, A. D. (1999). | Sustainable development aims to balance the needs of the economy, the environment, and society (Basiago, 1999). | Nothing was said about gender issues and human rights, the green economy, or financing. |
| Tjarve, B. and Zemite, I. (2016). | Sustainable development means improving and maintaining a healthy economic, environmental, and social life. | Lack of concern for future generations |
| Stoddart (2011) | Sustainability is efficient and equitable, linking the intergenerational and intergenerational distribution of resources with socio-economic activities within a limited ecosystem . | technologies, gender equality, social justice, are not covered enough. |
| Ben-Eli (2015) | It sees sustainability as a dynamic balance between a population and its environment. | Social justice is not covered. |

Particularly in resource-rich countries, the resilience of ecosystems can be a key factor for sustainable economic development, as it ensures the continued availability of natural resources and ecosystem services for the well-being of future generations.

[11] Yi, C., Jackson, N., 2021. A review of measuring ecosystem resilience to disturbance. Environ. Res. Lett. 16 (5), 053008 .

[12] Developed by the author.

In addition, the experience of foreign countries in ensuring sustainable development in the national economy was analyzed and appropriate proposals and recommendations were developed for Uzbekistan. In particular, based on the experience of **South Korea ,** proposals were developed for Uzbekistan to introduce digital technologies in recycling and waste monitoring, widely use energy-efficient equipment, and restrict the import of household appliances that do not fall into the energy efficiency category "A" imported into Uzbekistan.

**Germany** has developed renewable energy sources and created an advanced waste recycling system based on its "Energiewende" (Energy Revolution) strategy. Germany has a well-developed charging infrastructure for electric vehicles. Based on Germany's experience, proposals have been developed for Uzbekistan to expand the use of solar and wind energy and encourage public-private partnerships to develop the recycling industry [13].

**Sweden** is one of the world's leading countries in terms of waste recycling, recycling more than 99% of waste or using it to generate energy . Based on Sweden's experience, proposals have been developed for Uzbekistan to build waste recycling plants and convert waste into a source of energy, as well as to conduct extensive promotional activities to develop an ecological culture among the population.

**China** is achieving sustainable development by reducing industrial emissions and introducing green technologies. The "green economy" model combines economic development and environmental safety. Based on China's experience, a number of proposals have been developed for Uzbekistan to introduce environmentally friendly technologies in local industries and provide subsidies for the development of green technologies by the state.

When choosing electric buses, trams and trolleybuses, it is important to consider their environmental impact, technological capabilities and economic efficiency. Taking into account the problems associated with the recycling of electric bus batteries, trams and trolleybuses can be considered as an ecologically and technologically alternative mode of transport. According to statistics, the number of passengers on the tram is higher than on others, the price is lower, and the economic efficiency is higher due to the large passenger flow. Today, among foreign countries, you can get acquainted with the countries where trolleybuses are used: Switzerland, Italy, the Czech Republic, Hungary, Greece, Poland, Romania, Russia, Belarus, Kazakhstan, China, North Korea, Iran, the USA, Canada, Mexico, Brazil, Argentina, Ecuador. Based on the proposals of the dissertation work, the Decree of the President of the Republic of Uzbekistan No. PF-16 dated January 30, 2025 On the State Program for the Implementation of the Strategy "Uzbekistan - 2030" in the Year of Environmental Protection and "Green Economy" includes the task of developing a project for the construction of a tram line in the city of

[13] Sh.Khamdamov, N.Tilabov. Privatization and public-private partnership. Textbook. Tashkent State University of Economics. 2023. 247p.

Tashkent and the task of purchasing 10 new trolleybuses for the Urgench-Khiva route. included [14].

**Second chapter is called as "Improving the methodology for ensuring sustainable economic development of the economy".** This chapter includes foreign experiences in sustainable development. studied and addressed the issues of adapting it to the conditions of the Uzbek economy, as well as developing practical mechanisms for the efficient use of resources and waste management .

The study improved the methodology for calculating environmental sustainability.

***GHA= Ecological footprint / biocapacity (1)***

Here,

**GHA** (Global Hectare) - level of ecological sustainability

**Footprint** - The difference between resources consumed (energy, transportation, food consumption, etc.) and resources regenerated.

**Biocapacity** is the ability of ecological systems to self-restore and utilize available resources, i.e. land area, forests, water resources, and their production capacity per person.

To calculate the GFA, the ecological footprint must be compared to the biocapacity. This process shows how much of a resource each individual or country consumes in the GFA.

*As a result According to the methodological approach, the level of ecological sustainability of the territory is calculated by classifying it into groups of "high compatibility" (0<GHA≤0.3), "higher than average compatibility" (0.3<GHA≤0.5), "medium compatibility" (0.5<GHA≤0.7), "low compatibility" (0.7<GHA≤1), and the implementation of the medium-term green economy development strategy is based on indicators of the level of ecological sustainability and the effectiveness of their use, so that the ratio of the ecological footprint to the biocapacity does not exceed the sustainability criteria.*

If the human ecological footprint exceeds the ecological carrying capacity, it can lead to resource depletion, ecological instability, and loss of natural balance. Therefore, increasing ecological carrying capacity and reducing the ecological footprint are necessary to ensure sustainable development and environmental security.

Sustainable economic development is a major challenge for resource-rich regions today. In this process, it is necessary to combine economic growth with environmental sustainability and social justice. Technological innovation, efficient use of natural resources, and increased environmental resilience are crucial for sustainable development. Therefore, this section analyzes the impact of these factors on economic sustainability.

This study empirically examines the factors of sustainable economic development in resource-rich countries. The study uses panel data from 1995 to 2020, and analyzes 10 high-resource countries. The research methods used are Panel, ARDL model and AMG regression to study long- and short-term

[14] "Uzbekistan - 2030" - Online portal of the people's strategy. https://uzbekistan2030.uz/uzc/muhokama

relationships from econometric models. Westerlund co-integration test and CIPS unit root test were used to determine the stationarity and interdependence of the data. The biocapacity indicator was used to substantiate the positive impact of environmental resources on economic development.

Ecological capacity is a measure of the ability of an ecological system to produce the natural resources needed for human needs and to absorb the waste generated by human activities. It is measured in global hectares (Gha) and reflects the amount of natural resources per person. Areas with high biocapacity are rich in natural resources and can process more waste, while low biocapacity indicates overuse or degradation of natural resources.

Ecological capacity includes the ability of natural systems to produce renewable resources such as food, timber, and clean water, absorb carbon dioxide from the atmosphere, or eliminate waste. The relationship between biocapacity and human needs is important. If human activities exceed biocapacity, this will lead to a disruption of the ecological balance. The following is an econometric analysis of the calculation of ecological sustainability:

**GDPPC** (Gross Domestic Product Per Capita) is the dependent variable, which is gross domestic product per capita (measured in 2023 prices, in US dollars).

Independent variables:

**BIO** — biocapacity;

**TECH** — represents the level of technological development, the number of patents registered by domestic and foreign inventors;

**NR** represents the efficiency of natural resource use, with natural resource rent measured as a percentage of GDP;

**INS** - represents the quality of the organization, expressed as an index of government effectiveness (an index measuring the effectiveness of economic and political organizations from -2.5 to +2.5);

**TOP** represents trade openness, expressed as a percentage of international trade volume to GDP.

**Table 2 .**

**Explanation of statistical data of variables[15]**

| Indicators | Average | Standard error | Minimum | Maximum |
|---|---|---|---|---|
| GDP per capita | 39,928 | 16,238 | 2168 | 87124 |
| Natural resource (% of GDP) | 0.85 | 1.51 | 0.01 | 8.68 |
| Total Patents | 103,415 | 156,510 | 1447 | 621 453 |
| By population Patents | 34,875 | 63,112 | 124 | 336 340 |
| By non-residents Patents | 68,540 | 109,200 | 1283 | 387 364 |
| Trade (% of GDP) | 54.2 | 23.9 | 15.8 | 133.7 |
| Government efficiency index | 1.15 | 1.06 | -2.09 | 2.16 |
| Biological capacity population per capita | 4.3 | 5.7 | -1.3 | 18.2 |

If we look at the statistics, the minimum value for GDP (Gross Domestic Product) per capita in the countries is only $2,168, while the maximum value

[15] Developed by the author based on data from Standard and Poor's and the World Bank.

is $87,124. This large difference indicates economic inequality. The average value is $39,928, which indicates a very high level of prosperity in some countries. The ratio of natural resources to GDP (0.85) is low, but the maximum value reaches 6.68. This indicates that in some countries there is a very high reliance on resources, but in most they are not very important. Even if there are many resources, this does not always mean efficiency. The sharp differences in the number of patents (min 1,447, max 621,453) indicate large differences in technological progress. The average number of patents obtained by non-residents (68,540) indicates the role of international companies and investors, rather than domestic innovative activity. This suggests that some countries may be innovation exporters. In the next step, a regression model was developed based on this data (see Table 3).

**Table 3 .**

**AMG regression model[16]**

| LnGDPPC | Coefficients | St.d Error | t-value | p-value |
|---|---|---|---|---|
| LnBIO | 0.201*** | 0.069 | 2.902 | 0.004 |
| INS | 0.144*** | 0.021 | 6.685 | 0.000 |
| LnNR | −0.057*** | 0.005 | −10.646 | 0.000 |
| LnTECH | 0.146*** | 0.022 | 6.553 | 0.000 |
| LnTOP | 0.429*** | 0.042 | 10.201 | 0.000 |
| Short Run Equation | | | | |
| C | 2.709** | 1.353 | 2.003 | 0.047 |
| ΔLnBIO | −0.073* | 0.043 | −1.668 | 0.098 |
| ΔINSΔ | −0.023* | 0.013 | −1.769 | 0.079 |
| ΔLnNR | 0.002 | 0.016 | 0.118 | 0.906 |
| ΔLnTECH | −0.015 | 0.094 | −0.155 | 0.877 |
| ΔLnTOP | 0.058 | 0.111 | 0.525 | 0.601 |
| $ECM_{t-1}$ | −0.272** | 0.135 | −2.020 | 0.045 |

*Note: *** indicates significance level at 1%, ** at 5%, and * at 10% .*

As a result of the study, the positive impact of environmental sustainability on economic growth (0.201%), the negative impact of overexploitation of natural resources (-0.057%), the impact of innovation and technological development on economic growth (0.146%), and the positive impact of trade openness (0.429%) and government efficiency (0.144%) on sustainable economic development were substantiated in econometric studies.

*As a result, opportunities for increasing ecological resilience have been developed based on the negative consequences of overexploitation of natural resources and the positive effects of ecological resilience, based on econometric models that represent the relationship between sustainable development factors affecting economic growth rates in resource-rich regions.*

The next study analyzed how the diversity of management personnel in organizations (management personnel in organizations) affects factors such as

[16] Developed by the author.

green growth, renewable energy, social inclusion, and the protection of natural capital.

In particular, the diversity of management personnel in organizations was analyzed through dimensions such as gender diversity on the governing bodies, diversity of experience, cultural diversity, professional background and the presence of independent directors. This diversity was found to have a significant impact on environmental, economic and social aspects. Gender diversity and the presence of independent directors had a positive impact on the increase in renewable energy sources and the protection of natural capital.

The figure 1 shows that the Board Diversity Index and the Green Growth Index are closely related in organizations:

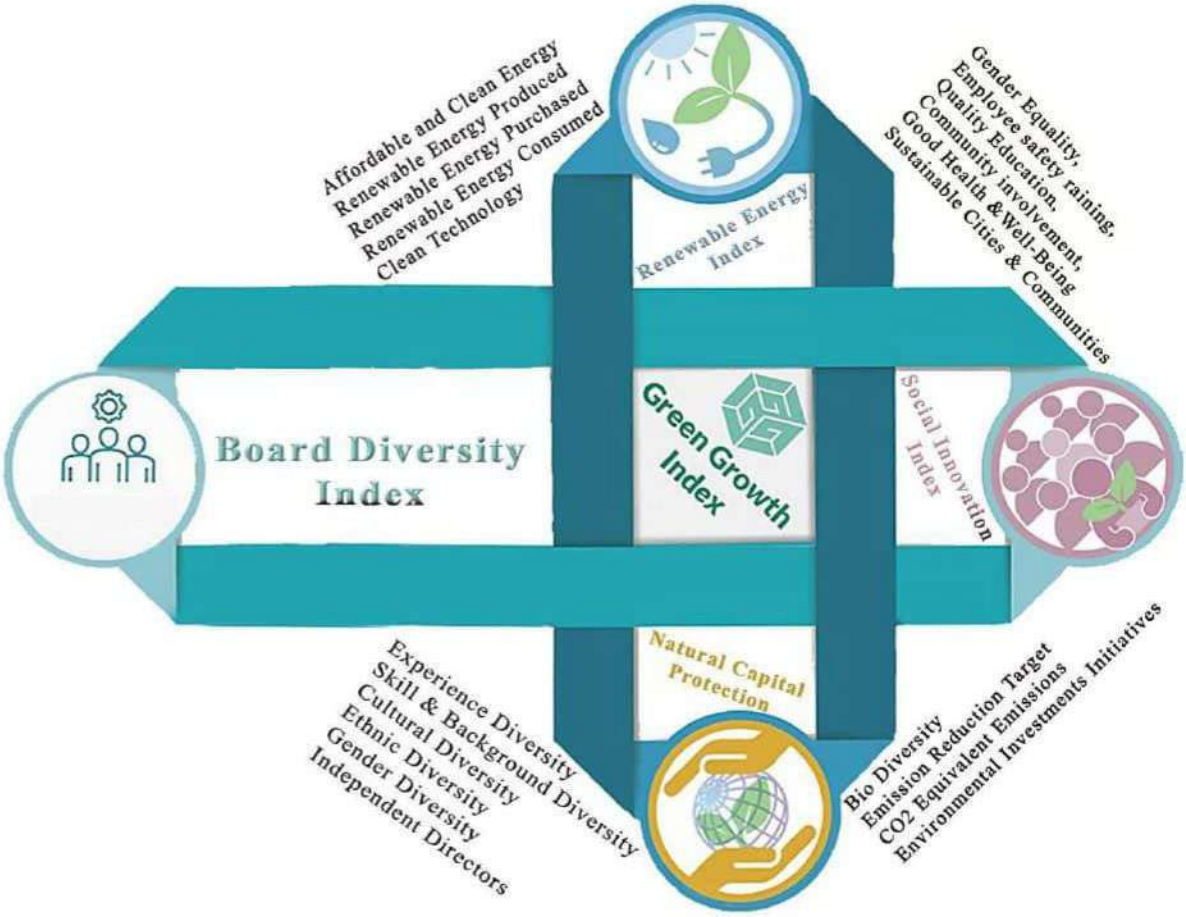



**Figure 1. In organizations management employees diversity and green growth index dependency graph [17].**

The figure shows that diversity in management positions in organizations influences the strategic decisions of the organization and promotes the three main components of green growth (renewable energy index, social innovation, and protection of natural capital). Each element of diversity (gender, culture, experience, etc.) has an individual impact on green growth, for example, by supporting renewable energy or social inclusion.

[17] Author's development.

**Table 4 .**

**Classification of variables[18]**

| Variables | Variable Name | Symbol | Measurement |
|---|---|---|---|
| Independent Variables | Board Diversity Index | BDIN | Index score constructed by five items of diversity |
| | Work Force Diversity | WFD | Diversity in workforce at workplaces |
| | Gender Diversity | GND | Portion of female directors in board rooms |
| | Experience Diversity | EXD | Ratio of Experience directors in board rooms |
| | Ethnic Diversity | ETD | Portion of foreign directors in board rooms |
| | Cultural Diversity | CLD | Portion of directors with various cultures |
| | Professional Backgrounds and Skills | PBD | Directors with diverse Professional Backgrounds |
| | Independent Directors | IND | Total no of outside directors present in board |
| Dependent variables | Green Growth Index | GGI | Aggregate of renewable energy index, social inclusion and natural capital protection index |
| | Renewable energy index | REIN | Index score constructed by five items of clean energy |
| | Total Renewable energy | TREN | Total amount of renewable energy used per year |
| | Affordable and Clean Energy | ACE | Measured by SDG7 |
| | Renewable Energy Consumed | REC | Total renewable energy consumed per year |
| | Renewable Energy Purchased | REP | Total renewable energy Purchased per year |
| | Renewable Energy Produced | REPO | Total renewable energy Produced per year |
| | Green Supply Chain | GSC | Adoption of green production and green logistics |
| | Green Technology | GTH | Expense incurred on clean technology per year |
| | Natural Capital Protection Index | NCIN | Index score constructed by four items of natural capital |
| | Bio Diversity | BID | Efforts made to protect living organism and habitats |
| | Emission reduction Targets | ERT | Targets focus on reducing greenhouse release |
| | $CO_2$ equivalent emissions | CEE | Total amount of carbon emitting gases |
| | Environmental investment initiatives | EII | Financial efforts to promote environmental sustainability and protect natural resources |
| | Social Inclusion Index | SCIN | Index score constructed by five items of social development |
| | Gender Equality | GE | Measured by SDG5 |
| | Employee Safety Training | EST | Employ training initiative taken within workplace |
| | Quality Education | QE | Measured by SDG4 |
| | Community Involvement | CI | Social contributions of community members |
| | Good Health and well Being | GHW | Measured by SDG3 |
| | Sustainable cities and societies | SCS | Measured by SDG11 |
| Control Variables | Returns on capital invested | ROC | Profits after tax/ Total Capital invested |
| | Returns on equity | ROE | Profits after tax/ Total Equity |

Following Table 4 elaborates on the measurement of variables and their symbols incorporated in the proposed model. Each variable is operationalized and briefly defined its dimensions assigned to proposed index. Board diversity index considered as focused variable to address green growth index and its dimensions (see Table 4).

The study analyzed data from 451 non-financial companies between 2012 and 2023. Research methods Panel data analysis, Generalized Method of Moments (GMM), and Moment-Based Quantile Regression (MMQR) were used to study the asymmetric impact of management diversity on green growth in organizations, and

[18] Author's development.

empirical modeling and Pearson correlation test were used to measure the degree of correlation between management diversity and green growth indicators in organizations.

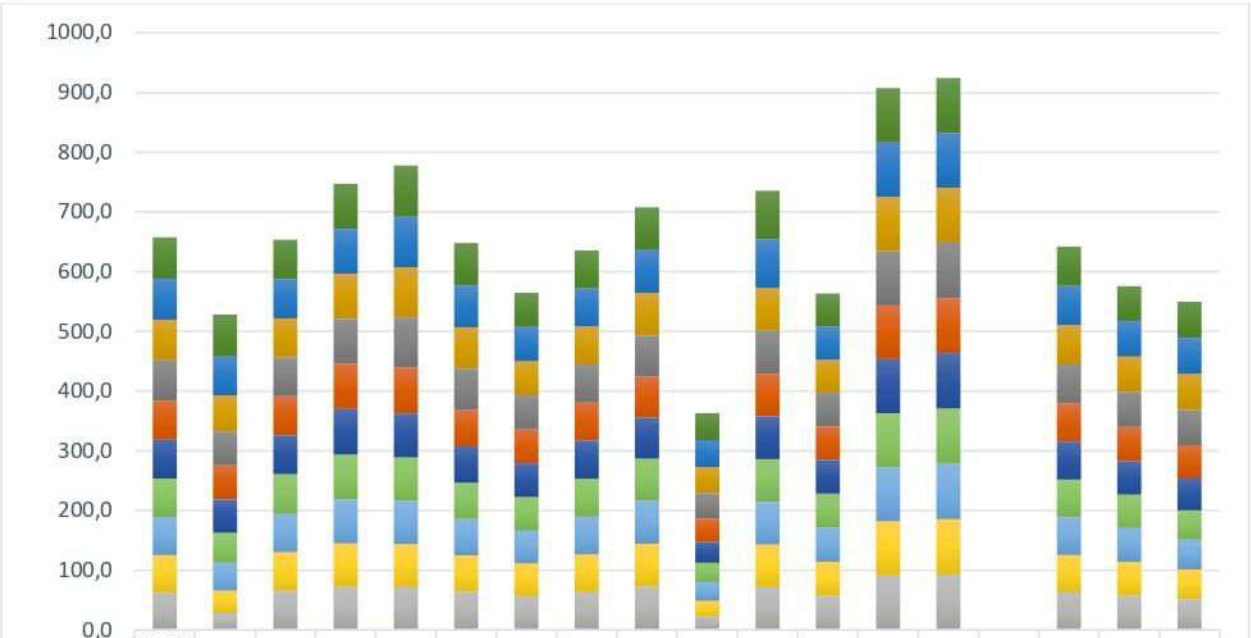
The results have important practical implications for investors, policymakers, and regulators from an environmental perspective. The results reveal a U-shaped relationship between top management diversity and green growth practices in organizations. The study also highlights the role of female directors in promoting social inclusion, reinforcing gender socialization theory, as women prioritize stakeholder interests and demonstrate a heightened sensitivity to the environment. This experience can help make informed decisions about green practices, while directors from diverse cultural backgrounds have a positive impact on the adoption of renewable energy.

The analysis found that gender, cultural, and experience diversity among management staff in organizations has a significant positive impact on green growth. The highest impact was observed in gender diversity and the presence of independent directors. As organizational diversity increases, the rate of green growth initially accelerates, but after a point of persistence, this effect diminishes. In various organizations, management personnel have been effective in increasing the share of renewable energy, reducing $CO_2$ emissions, and attracting environmental investments.

*As a result, in economic theory, the curve Based on the linear hypothesis, according to which organizations have the potential to achieve green economic growth in sustainable development through gender diversity in management personnel, the presence of independent directors, and cultural and experience diversity.*

In particular, the study measured environmental sustainability for the first time through biocapacity, proving its long-term positive impact on economic growth. It was found that high dependence on natural resources has a long-term negative impact on sustainable economic development. This indicated the need for diversification and increased efficiency in natural resource management. Technological innovation was identified as a key driver of long-term economic growth. It was based on the fact that effective management of economic resources and increased diversification can lead to positive results. Trade openness significantly contributed to sustainable economic development. The positive impact of international trade through the efficient use of resources and the attraction of technologies was confirmed. The positive impact of organizational quality on sustainable economic development was identified. The strength and efficiency of organizations have been proven to be an important factor in stabilizing economic growth.

**Third chapter is titled "Analysis of indicators of sustainable development in the economy of Uzbekistan".** This chapter assessed the main factors affecting the sustainable development of the Uzbek economy, including regional and inter-sectoral economic inequality, as well as the level of innovative and technological development.




| | SDG overal | SDG 1 | SDG 2 | SDG 3 | SDG 4 | SDG 5 | SDG 6 | SDG 7 | SDG 8 | SDG 9 | SDG 10 | SDG 11 | SDG 12 | SDG 13 | SDG 14 | SDG 15 | SDG 16 | SDG 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 | 69,2 | 71 | 66 | 76 | 86 | 71 | 57 | 64 | 72 | 45 | 82 | 56 | 91 | 92 | | 66 | 58 | 60 |
| 2022 | 69,0 | 65 | 66 | 75 | 85 | 70 | 57 | 64 | 72 | 45 | 82 | 56 | 91 | 92 | | 66 | 59 | 60 |
| 2021 | 67,9 | 60 | 66 | 76 | 84 | 69 | 57 | 64 | 71 | 44 | 72 | 55 | 91 | 92 | | 66 | 59 | 61 |
| 2020 | 67,2 | 57 | 65 | 75 | 84 | 69 | 57 | 64 | 69 | 42 | 72 | 56 | 91 | 93 | | 65 | 59 | 59 |
| 2019 | 65,8 | 57 | 65 | 76 | 77 | 61 | 57 | 64 | 69 | 39 | 72 | 56 | 90 | 92 | | 64 | 58 | 56 |
| 2018 | 64,9 | 56 | 65 | 76 | 74 | 61 | 57 | 64 | 69 | 35 | 72 | 56 | 90 | 93 | | 64 | 56 | 53 |
| 2017 | 64,3 | 50 | 67 | 75 | 73 | 61 | 57 | 63 | 70 | 32 | 72 | 57 | 91 | 93 | | 63 | 56 | 49 |
| 2016 | 63,8 | 47 | 64 | 74 | 73 | 61 | 54 | 63 | 72 | 31 | 72 | 57 | 90 | 93 | | 63 | 57 | 50 |
| 2015 | 63,0 | 37 | 65 | 73 | 72 | 61 | 56 | 63 | 72 | 26 | 72 | 57 | 91 | 93 | | 63 | 57 | 50 |
| 2014 | 62,4 | 28 | 65 | 72 | 72 | 64 | 56 | 63 | 72 | 23 | 72 | 57 | 91 | 93 | | 63 | 57 | 51 |

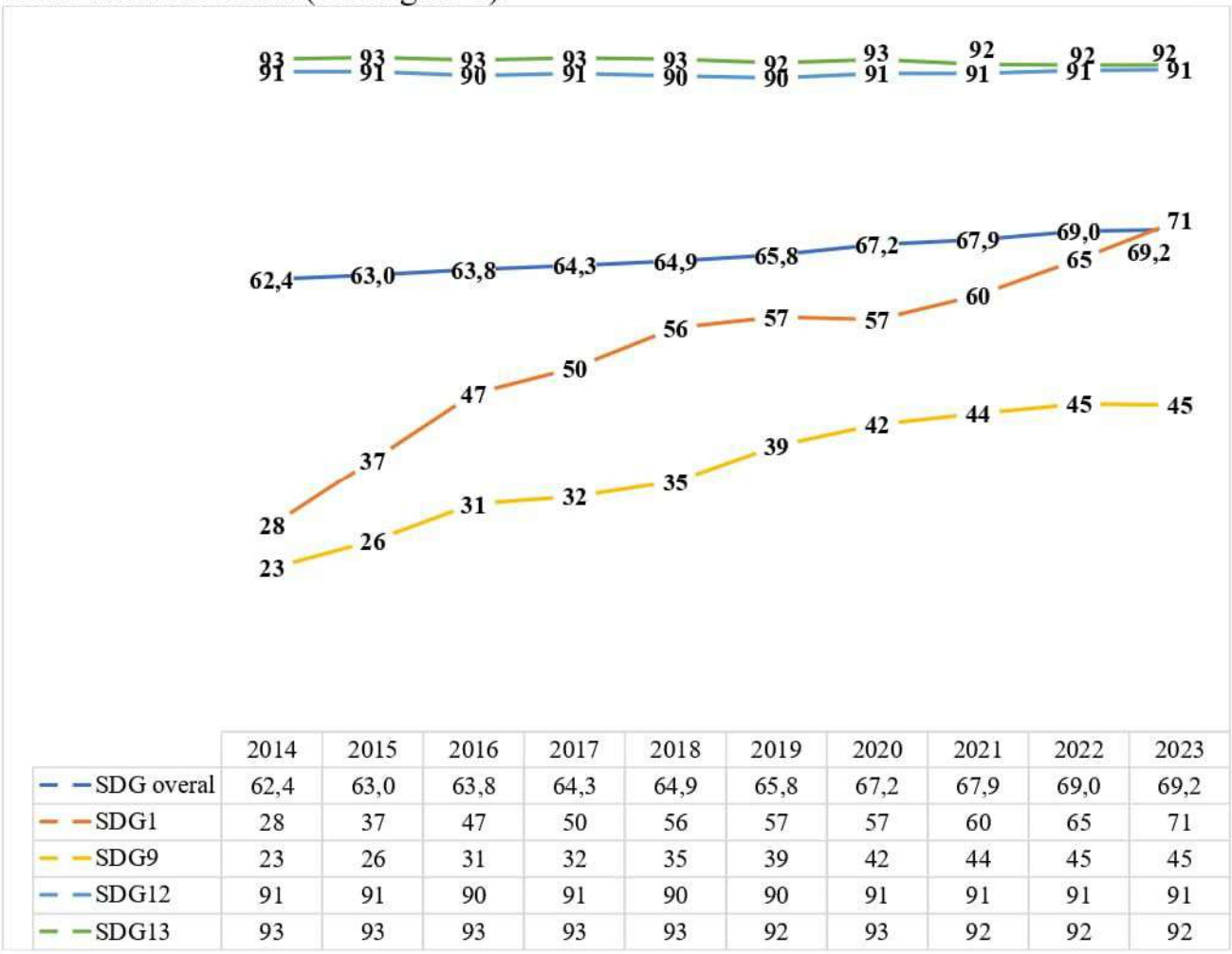
**Figure 2. Dynamics of sustainable development goals indicators in Uzbekistan[19].**

To date, developed countries have achieved positive results in ensuring sustainable development, in particular in terms of social justice, gender equality, environmental protection, renewable energy and technological innovation. However, in most countries, the transition to sustainable development, a green economy and inclusive growth is progressing slower than population growth. While today the daily energy consumption per person is 2.5 kW (kilowatts), due to the development of technical progress, this figure will be 9.5 kW in 2100, and due to the increase in the population, the annual demand for energy consumption worldwide is expected to increase from 18.2 tw (trillion watts) to 123 tw[20]. Taking into account the need to ensure sustainable development while increasing additional energy production, the cost of green energy compared to fossil fuel energy and the fact that the transition to it requires additional investments, this topic remains relevant in developing countries. These issues require scientific research aimed at coordinating policies to ensure sustainable development.

[19] Developed by the author.
[20] https://www.anthropocenemagazine.org/howmuchenergy/

To calculate the sustainable development of countries, indices and sub-indices corresponding to the 17 Sustainable Development Goals were selected. Each SDG (Sustainable Development Goals) was scored on a scale of 0-100 (see Figure 2) .

In 2014-2023, Uzbekistan's sustainability scores for many MDGs averaged 56-80 points. However, in 2014, the implementation of MDG1 (poverty eradication) and MDG9 (industrialization, innovation and infrastructure) in our country was much lower than average, at 23 and 28 points, respectively. By 2023, the implementation of MDG9 had increased to a positive result of 71 points, while the implementation of MDG1 had increased to 45 points, still recording a negative result from the norm (see Figure 3).




| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG overal | 62,4 | 63,0 | 63,8 | 64,3 | 64,9 | 65,8 | 67,2 | 67,9 | 69,0 | 69,2 |
| SDG1 | 28 | 37 | 47 | 50 | 56 | 57 | 57 | 60 | 65 | 71 |
| SDG9 | 23 | 26 | 31 | 32 | 35 | 39 | 42 | 44 | 45 | 45 |
| SDG12 | 91 | 91 | 90 | 91 | 90 | 90 | 91 | 91 | 91 | 91 |
| SDG13 | 93 | 93 | 93 | 93 | 93 | 92 | 93 | 92 | 92 | 92 |

**Figure 3. Positive and negative GDP trends in Uzbekistan[21]**

The most positive performance in Uzbekistan in terms of SDG implementation in 2014-2023 was SDG 12 (responsible consumption and production) and SDG 13 (combating climate change), which were assessed positively at around 91-93 points. If we explain this with the traditions and customs of our people regarding responsible consumption, as well as the government policy in the country to promote green energy and expand planting of

[21] Developed by the author.

seedlings in the Aral Sea, the implementation of SDG 13 was assessed relatively positively.

The population of Uzbekistan is growing every year, which increases the volume of household and industrial waste. With the growth of the population, the volume of consumption also increases, which directly affects the production of pollutants released into the atmosphere. According to this hypothesis, the factors listed above significantly affect the volume of pollution, which requires the development of environmental improvement strategies based on these factors.

It is proposed to introduce a Japanese system for waste separation. It is based on the need to expand waste collection containers. In particular, it is based on the introduction of a mechanism for collecting and transporting organic waste on Monday, plastics on Tuesday, paper and cardboard on Wednesday, metal waste on Thursday, and glass waste on Friday.

The mechanism for tax exemptions or subsidies for waste recycling enterprises, promoting the "Zero Waste" initiative, requiring large companies to be responsible for waste management, limiting the use of single-use plastic products, adopting strict laws to reduce the use of plastic bags, containers and other packaging materials, and encouraging the introduction of recyclable and environmentally friendly packaging materials as alternatives has been improved.

expanding the use of renewable energy sources such as solar, wind, and bioenergy, using environmentally friendly technologies to reduce carbon emissions in electricity generation, and creating a carbon-neutral electricity generation sector in Uzbekistan by 2050.

**Chapter 4 is entitled "Strategies and scientific recommendations aimed at ensuring sustainable development" and** analyzed the impact of environmental sustainability on economic growth, the negative consequences of overexploitation of natural resources, the impact of innovation and technological development on economic growth, the role of trade openness, and government effectiveness.

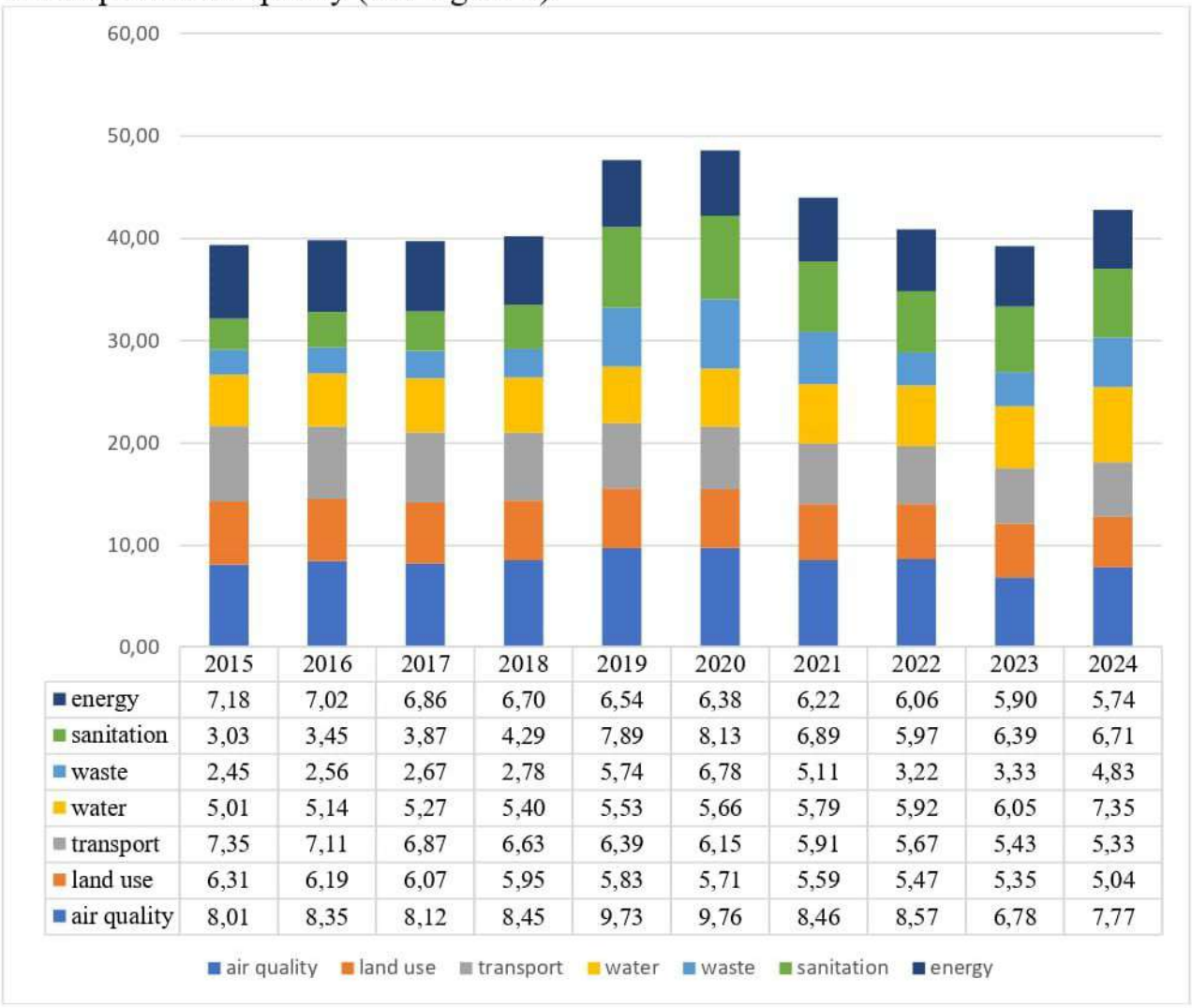
*The proposal is based on the economic efficiency of the subsidies and benefits provided to cover part of the costs of purchasing renewable energy equipment, water pumping stations, and portable generators, aimed at stimulating the real sector of the economy.*

A subsidy was justified and introduced to cover the cost of electricity consumed by pumping units for irrigation of consumers' fields. A proposal and mechanism were developed to provide subsidies to consumers in the amount of 100 percent of the cost of electricity consumed when irrigating cotton raw materials and grain crops using existing drip, sprinkler or discrete irrigation systems, and 50 percent of the cost of electricity consumed when irrigating cotton and grain fields without using water-saving irrigation technology.

As part of the development of green energy, a subsidy was justified and a proposal was submitted to the government for individuals who installed solar panels in their homes. As a result, the “Solar House” program was launched, within the framework of which a proposal was made to provide a subsidy of 1,000 soums for each kilowatt-hour of electricity generated by solar panels and

transmitted to the unified electricity system for individuals who installed solar panels in their homes.

The Green Cities Index for Uzbekistan as a whole, we can see moderation in 2015-2019, when it was estimated at around 40 points out of 100. By 2019-2020, the green economy status increased from 40 points to 58 points. We explain this positive change with the impact of the Covid-19 pandemic measures. The reason is that during this period, due to the reduction in traffic and the transition to remote work, energy consumption in enterprises decreased, which reduced $CO_2$ emissions and improved air quality (see Figure 4).




| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| energy | 7,18 | 7,02 | 6,86 | 6,70 | 6,54 | 6,38 | 6,22 | 6,06 | 5,90 | 5,74 |
| sanitation | 3,03 | 3,45 | 3,87 | 4,29 | 7,89 | 8,13 | 6,89 | 5,97 | 6,39 | 6,71 |
| waste | 2,45 | 2,56 | 2,67 | 2,78 | 5,74 | 6,78 | 5,11 | 3,22 | 3,33 | 4,83 |
| water | 5,01 | 5,14 | 5,27 | 5,40 | 5,53 | 5,66 | 5,79 | 5,92 | 6,05 | 7,35 |
| transport | 7,35 | 7,11 | 6,87 | 6,63 | 6,39 | 6,15 | 5,91 | 5,67 | 5,43 | 5,33 |
| land use | 6,31 | 6,19 | 6,07 | 5,95 | 5,83 | 5,71 | 5,59 | 5,47 | 5,35 | 5,04 |
| air quality | 8,01 | 8,35 | 8,12 | 8,45 | 9,73 | 9,76 | 8,46 | 8,57 | 6,78 | 7,77 |

**Figure 4. Green Economy (GCI) Index indicators in Uzbekistan[22]**

According to the figure, we can see a decline in green economy indicators in 2021-2023, which is explained by the rapid growth in production in the energy industry and other industrial sectors after the lifting of Covid-19 pandemic restrictions, population growth, and increased construction.

In order to transition to a green economy, protect the environment, and reduce $CO_2$ emissions in Uzbekistan, there is a need to regulate subsidies and benefits for

[22] The GCI was compiled by the author based on the Index.

covering the costs of purchasing renewable energy sources, water pumping stations, and portable generators on the basis of economic efficiency. This, in turn, is aimed at strengthening energy security, ensuring the continuity of production processes, and eliminating problems with electricity supply in remote areas. These measures will allow reducing production costs, producing competitive products, increasing export volumes, and effectively using local resources. The allocation of subsidies and benefits only to projects with high economic efficiency will ensure targeted and effective use of the state budget.

## CONCLUSION

The conducted scientific research and analysis led to the following conclusions in our research work:

1. According to the methodological approach, the essence of the concept of "sustainable development" is to improve the quality of meeting needs in accordance with demographic and social changes, gender equality, priority of environmental requirements and rational use of natural resources, as well as the effective use of technological and innovative and economic mechanisms, adapting to climate change and deepening local and global integration.

2. According to the methodological approach, the level of ecological sustainability of the region is assessed based on the classification of the groups “high level of compatibility” ($0<GHA\leq0.3$), “medium-high level of compatibility” ($0.3<GHA\leq0.5$), “medium level of compatibility” ($0.5<GHA\leq0.7$), “low level of compatibility” ($0.7<GHA\leq1$), and indicators for assessing the level of ecological sustainability and the efficiency of their use in implementing the medium-term green economy development strategy are proposed so that the ratio of the ecological footprint to the ecological capacity does not exceed the sustainability criteria.

3. According to econometric models that express the relationship between sustainable development factors affecting economic growth indicators in resource-rich regions, opportunities for increasing ecological sustainability are developed based on the negative consequences of overuse of natural resources and the positive impact of ecological sustainability.

4. The theory of economics is based on the curve hypothesis, according to which the possibilities of achieving green economic growth in sustainable development are based on gender diversity in the composition of management personnel, the presence of independent managers, cultural and experience diversity in organizations.

5. The proposal is based on the economic efficiency of subsidies and benefits provided from the budget to cover part of the costs of purchasing renewable energy equipment, water pumping stations and portable generators aimed at stimulating the real sector of the economy.

6. The study identified factors that hinder the sustainable development of the Uzbek economy, including waste generation, dependence on raw material exports and insufficient environmental safety. To solve these problems, a new econometric

model for waste management, approaches to improving transport and energy infrastructure, and a mechanism for introducing environmentally friendly technologies were developed.

7. Scientific recommendations have been developed to reduce the hidden economy in ensuring sustainable development in the country. In particular, scientifically based approaches have been developed to reduce carbon emissions in transport and energy infrastructure, and to prevent the hidden economy in public transport. Measures have been developed to encourage the transition to electronic payment in public transport in Tashkent.

8. Based on the creation of a crowdfunding fund for green energy financing in Uzbekistan, a mechanism for encouraging business entities that support this project has been developed.

9. Recommendations have been developed to intensify the use of renewable energy sources and the introduction of environmentally friendly technologies in Uzbekistan.

10. Proposals have been developed to improve the system of constant exchange of information and joint development of economic policy measures between the bodies responsible for the implementation of sustainable development goals in the national economy.

11. The methodology for identifying problems related to sustainable development in the national economy has been improved and scientific and methodological proposals and practical recommendations have been developed to solve them.

**НАУЧНЫЙ СОВЕТ DSc.03 / 30.01.2021.I.16.03 ПО ПРИСУЖДЕНИЮ УЧЕНЫХ СТЕПЕНЕЙ ПРИ ТАШКЕНТСКОМ ГОСУДАРСТВЕННОМ ЭКОНОМИЧЕСКОМ УНИВЕРСИТЕТЕ**

**НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ЦЕНТР «НАУЧНЫЕ ОСНОВЫ И ПРОБЛЕМЫ РАЗВИТИЯ ЭКОНОМИКИ УЗБЕКИСТАНА» ПРИ ТАШКЕНТСКОМ ГОСУДАРСТВЕННОМ ЭКОНОМИЧЕСКОМ УНИВЕРСИТЕТЕ**

**ХАМДАМОВ ШОХ-ЖАХОН РАХМАТ УГЛИ**

# СОВЕРШЕНСТВОВАНИЕ МЕТОДОЛОГИИ ОБЕСПЕЧЕНИЯ УСТОЙЧИВОГО РАЗВИТИЯ НАЦИОНАЛЬНОЙ ЭКОНОМИКИ

**08.00.02 – Макроэкономика**
**08.00.01 – Экономическая теория**

**АВТОРЕФЕРАТ**
**диссертации на соискание ученной степени доктора экономических наук (DSc)**

**Ташкент — 2025**

**Тема диссертации на соискание ученой степени доктора наук (DSc) зарегистрирована в Высшей аттестационной комиссии под номером B2025.1.DSc/Iqt523.**

Диссертация выполнена в Научно-исследовательском центре «Научные основы и проблемы развития экономики Узбекистана» при Ташкентском государственном экономическом университете.

Автореферат диссертации на трех языках (узбекский, русский, английский (резюме)) размещен на веб-сайте Научного совета (www.tsue.uz) и на Информационно-образовательном портале «ZiyoNet» (www.ziyonet.uz).

| | |
|---|---|
| **Научный консультант :** | **Усманов Анвар Саидмахмудович**<br>доктор экономических наук, профессор |
| **Официальные оппоненты:** | **Абдурахмонов Каландар Ходжаевич**<br>академик, доктор экономических наук, профессор |
| | **Насирходжаева Дилафруз Сабитхановна**<br>доктор экономических наук, профессор |
| | **Мустафакулов Шерзод Игамбердиевич**<br>доктор экономических наук, профессор |
| **Ведущая организация:** | **Самаркандский государственный университет** |

Защита диссертации состоится «19» 08 2025 года в 10:00 часов на заседании Научного совета DSc.03/30.01.2021.I.16.03 по присуждению ученых степеней при Ташкентском государственном экономическом университете. Адрес: 100066, г. Ташкент, ул. Ислама Каримова, 49. Тел.: (99871) 239-28-72; факс: (99871) 239-43-51; e-mail: info@tsue.uz

С диссертацией можно ознакомиться в Информационно-ресурсном центре Ташкентского государственного экономического университета (регистрационный номер 1717). Адрес: 100066, г. Ташкент, ул. Ислама Каримова, 49. Тел.: (99871) 239-28-72; факс: (99871) 239-43-51.

Автореферат диссертации был разослан «04» 08 2025 года.

(реестр протокола рассылки №80 от «04» 08 2025 года).

**С.К Худойкулов**
Председатель Ученого совета по присуждению ученых степеней, д.э.н., профессор

**Б.Е. Мамарахимов**
Ученый секретарь Ученого совета по присуждению ученых степеней, к.э.н., профессор

**У. В. Гафуров**
Председатель научного семинара при Ученом совете по присуждению ученых степеней, д.э.н., профессор

## ВВЕДЕНИЕ (доктор наук (DSc)) аннотация диссертации )

**Целью исследования** является разработка предложений и рекомендаций по совершенствованию методологии устойчивого развития национальной экономики.

**Объектом исследования** являются направления деятельности, связанные с обеспечением устойчивого развития национальной экономики.

**Задачи исследования**:

совершенствование концептуальных основ путем исследования сущности и необходимости устойчивого развития национальной экономики;

научно-методическое совершенствование обеспечения устойчивого развития национальной экономики;

обогащение теоретических и методологических аспектов современных методов макроэкономического анализа и моделирования для обеспечения устойчивого развития национальной экономики;

проанализировать состояние устойчивого развития и практику координации политики устойчивого развития в Узбекистане;

исследование состояния перехода к зеленой экономике в Узбекистане и уровня выбросов загрязняющих веществ в атмосферу;

провести эконометрический анализ взаимодействия факторов устойчивого развития и сделать соответствующие выводы;

выявление проблем устойчивого развития национальной экономики и разработка научно-методических предложений и практических рекомендаций, направленных на их решение.

**Научная новизна исследования** заключается в следующем:

согласно методологическому подходу, совершенствуется сущность понятия «устойчивое развитие» на основе долгосрочного развития адаптации к изменению климата и углубления локальной и глобальной интеграции на основе качественного удовлетворения потребностей в соответствии с демографическими и социальными изменениями, гендерного равенства, приоритетности экологических требований и рационального использования природных ресурсов, эффективного использования технико-инновационных и экономических механизмов;

согласно методическому подходу уровень экологической устойчивости региона оценивается на основе классификации по группам «высокий уровень совместимости» ($0<GHA\leq0,3$), «уровень совместимости выше среднего» ($0,3<GHA\leq0,5$), «средний уровень совместимости» ($0,5<GHA\leq0,7$), «низкий уровень совместимости» ($0,7<GHA\leq1$), а также предлагаются индикаторы оценки уровня экологической устойчивости и эффективность их использования при реализации среднесрочной стратегии развития зеленой экономики таким образом, чтобы соотношение экологического следа к экологической емкости не превышало критерии устойчивости;

разработаны возможности повышения экологической устойчивости на основе негативных последствий чрезмерной эксплуатации природных ресурсов и позитивных эффектов экологической устойчивости на основе

эконометрических моделей, которые представляют собой взаимосвязь между факторами устойчивого развития, влияющими на темпы экономического роста в богатых ресурсами регионах;

на основе гипотезы кривой в экономической теории, согласно которой организации имеют потенциал для достижения зеленого экономического роста в условиях устойчивого развития за счет гендерного разнообразия в управленческом персонале, наличия независимых менеджеров, а также культурного и практического разнообразия;

предложение основано на экономической эффективности субсидий и льгот, предоставляемых для покрытия части затрат на приобретение оборудования возобновляемой энергетики, водонасосных станций и мобильных генераторов, направленных на стимулирование реального сектора экономики.

**Внедрение результатов исследования.** На основе полученных результатов по совершенствованию методологии устойчивого развития национальной экономики:

согласно методологическому подходу, суть концепции «устойчивого развития» заключается в качественно более полном удовлетворении потребностей демографических и социальных изменений, адаптации к изменению климата на основе гендерного равенства, приоритета экологических требований и рационального использования природных ресурсов, а также в эффективном использовании технологических, инновационных и экономических механизмов, и их совершенствовании на основе долгосрочного развития углубления локальной и глобальной интеграции. Теоретические выводы и методические рекомендации были использованы при подготовке учебника «Управление казначейством», рекомендованного для студентов бакалавриата по специальностям 5230600 - «Финансы и финансовые технологии» и 5231300 - «Бюджетный контроль и казначейство» (приказ ректора Ташкентского государственного экономического университета № 211 от 26 июня 2023 года). Данный научный результат послужил расширению возможности для студентов всестороннего понимания концепции устойчивого развития в гармонии с ее целями;

согласно методическому подходу, уровень экологической устойчивости территории оценивается на основе классификации на группы «высокая совместимость» ($0<GHA\leq0,3$), «совместимость выше средней» ($0,3<GHA\leq0,5$), «средняя совместимость» ($0,5<GHA\leq0,7$) и «низкая совместимость» ($0,7<GHA\leq1$ ) и предложение по индикаторам оценки уровня экологической устойчивости и эффективности их использования при реализации среднесрочной стратегии развития зеленой экономики с тем, чтобы соотношение экологического следа к экологической емкости не превышало критерии устойчивости, было использовано при разработке Закона Республики Узбекистан № ЎРҚ-1011 от 24.12.2024 г. «О Государственном бюджете Республики Узбекистан на 2025 год» (справка № 05/1051 Комитета по бюджету и экономическим вопросам Сената Олий

Мажлиса Республики Узбекистан от 12 марта 2025 года) и при подготовке учебника «Введение в экономическую политику» для студентов бакалавриата направления 5230100 – «Экономика» (приказ ректора Ташкентского государственного экономического университета от 26 июня 2023 года № 212). Данное предложение направлено на оценку уровня экологической устойчивости регионов. Оно в определенной степени послужило повышению точности оценки уровня устойчивости и расширению возможностей использования студентами методологии экологической устойчивости в практической и теоретической деятельности в соответствии с современными требованиями;

предложение о возможностях повышения экологической устойчивости, исходя из негативных последствий чрезмерного использования природных ресурсов и положительного воздействия экологической устойчивости, было использовано при разработке Закона «О Государственном бюджете Республики Узбекистан на 2025 год» (Справка Комитета по бюджету и экономическим вопросам Сената Олий Мажлиса Республики Узбекистан от 12 марта 2025 года № 05/1051 ). Предложение послужило в определенной мере научному обоснованию активного использования стимулов для перехода к зеленой энергетике и путей перехода к такой экономике;

предложение о возможностях достижения зеленого экономического роста в условиях устойчивого развития посредством гендерного разнообразия в составе управленческого персонала, наличия независимых менеджеров, а также культурного и опытного разнообразия в организациях, основанное на гипотезе кривой, было использовано в Законе «О Государственном бюджете Республики Узбекистан на 2025 год» (справка Комитета по бюджету и экономическим вопросам Сената Олий Мажлиса Республики Узбекистан от 12 марта 2025 года № 05/1051) и при подготовке учебника «Управление казначейством» для студентов направлений бакалавриата 5230600 - «Финансы и финансовые технологии» и 5231300 - «Бюджетный контроль и казначейство» (приказ ректора Ташкентского государственного экономического университета от 26 июня 2023 года № 211). Это предложение в определенной степени послужило расширению путей достижения зеленого экономического роста и повышению качества образования за счет улучшения качества практических и теоретических разработок;

государственном бюджете Республики Узбекистан на 2025 год» (24.12.2024, ЗРУ-1011) (Справка Комитета по бюджету и экономическим вопросам Сената Олий Мажлиса Республики Узбекистан от 12 марта 2025 года № 05/1051) включено предложение о регулировании, исходя из экономической эффективности, субсидий и льгот, предоставляемых для покрытия части затрат на приобретение оборудования возобновляемых источников энергии, водонасосных станций и мобильных генераторов, направленное на стимулирование реального сектора экономики. Реализация данного предложения в определенной степени способствовала расширению

возможностей стимулирования и масштабирования перехода к зеленой энергетике в обеспечении зеленой экономики страны.

**Апробация результатов исследования.** Результаты диссертационного исследования обсуждались на 4, в том числе на 2 республиканских и 2 международных научно-практических конференциях.

**Публикация результатов исследования.** По теме диссертации опубликовано 45 научных работ, в том числе 1 монография, 12 статей в научных журналах, рекомендованных ОАК, 22 статьи в отечественных и 4 статьи в зарубежных журналах и Scopus.

**Структура и объём диссертации.** Диссертация состоит из введения, 4 глав, заключения, списка литературы и приложений. Общий объём диссертации составляет 223 страницы.

## E’LON QILINGAN ISHLAR RO‘YXATI
## СПИСОК ОПУБЛИКОВАННЫХ РАБОТ
## LIST OF PUBLICATIONS

### I bo‘lim (I часть; I part)

1. Khamdamov Sh.R. Monograph. Factors of economic growth in ensuring sustainable development. Tashkent state university of economics. Tashkent -2023.
2. Khamdamov, S. (2024). Climate action: Mitigating and adapting to climate change in Uzbekistan. Miasto Przyszłości, 50, 497–500.
3. Khamdamov, S. J. (2024). The role of carbon pricing and emissions trading in Uzbekistan’s green growth strategy. Bulletin news in New Science Society International Scientific Journal, 1(3), 18-30.
4. Khamdamov, S.-J. (2023). Theoretical and methodological aspects of intensive economic growth in ensuring sustainable economic development. In M. V. Kaya & S. Bayrakdar (Eds.), Social and Economic Studies within the Framework of Emerging Global Developments (Vol. 3). Peter Lang Group AG. (Scopus)
5. Khamdamov, S. J. R. (2025). O‘zbekistonda yashil iqtisodiyotga o‘tish va barqaror rivojlanishga ta’sir etuvchi omillar. Yashil Iqtisodiyot va Taraqqiyot, 4, 1223–1224. (OAK)
6. Khamdamov, S. J. R. (2025). O‘zbekistonda ekologik barqarorlikka ta’sir etuvchi omillarni aniqlash. O‘zbekiston Sug‘urta Bozori, 2(2), 48–50. (OAK)
7. Xamdamov Sh. R. (2025). O‘zbekiston iqtisodiyotini barqaror rivojlanish ko‘rsatkichlari tahlili. Yashil iqtisodiyot va taraqqiyot. 2025 yil 2-son. (OAK)
8. Xamdamov Sh. R. (2025). Resursga boy mamlakatlar misolida ekologik va iqtisodiy omillar o‘rtasidagi o‘zaro bog‘liqlik tahlili. Muhandislik va iqtisodiyot. 2025 yil 3-son. (OAK)
9. Xamdamov Sh. R. (2025). O‘zbekistonda barqaror rivojlanish maqsadlari ijrosi tahlili. Ilg‘or iqtisodiyot va pedogogik texnologiyalar. 2025 yil 2-son. (OAK)
10. Xamdamov Sh. R. (2025). O‘zbekistonda atmosfera ifloslanishini baholash va barqarorlikni ta’minlash yo‘nalishlari. Marketing. 2025 yil 2-son. (OAK)
11. Khamdamov, S. J. (2024). Building a resilient food system in Uzbekistan: Strategies for sustainable agriculture and achieving zero hunger. Insurance Market of Uzbekistan, 1(10). (OAK)
12. Khamdamov, S. J. (2024). The impact of central bank policies and digitalization on GDP growth in Uzbekistan. Insurance Market of Uzbekistan, 1(6). (OAK)
13. Khamdamov, S. J. (2024). Rivojlanayotgan davlatlarda 2030 va 2063-yillarga mo‘ljallangan barqaror rivojlanish maqsadlarining uyg‘unlashuv sohalarini aniqlash. Insurance Market of Uzbekistan, 1(9). (OAK)
14. Khamdamov, S. J. (2024). Transition to renewable energy sources in Uzbekistan. Insurance Market of Uzbekistan, 1(11). (OAK)

15. Khamdamov, Sh. (2022). The impact of the Central Bank's refinancing rate on economic growth of Uzbekistan. Biznes-Expert, (9), 37–41.

16. Khamdamov, S.-J. (2024, October 24). Energy efficiency programs and their impact on $CO_2$ emissions in Uzbekistan. Milliy iqtisodiyotni isloh qilish va barqaror rivojlantirish istiqbollari mavzusidagi xalqaro ilmiy-amaliy konferensiya materiallari to'plami. Toshkent davlat iqtisodiyot universiteti.

17. Khamdamov, S.-J. (2023, November 16). The role of insurance in poverty reduction in Uzbekistan. Iqtisodiyotni barqaror rivojlantirishda sug'urtaning roli: Tendensiyalar, muammolar va yechimlar mavzusidagi xalqaro ilmiy-amaliy konferensiya materiallari to'plami. Toshkent davlat iqtisodiyot universiteti.

18. Khamdamov, S.-J. (2024). Main drivers of economic growth in Uzbekistan. Milliy iqtisodiyotni rivojlantirishda demografik omillarning o'rni mavzusidagi respublika ilmiy-amaliy konferensiya materiallari to'plami. Toshkent davlat iqtisodiyot universiteti.

19. Khamdamov, S.-J. (2023, May 31). O'zbekistonda barqaror rivojlanish maqsadlarini ta'minlash muammollari. Milliy iqtisodiyotni isloh qilish va barqaror rivojlantirish istiqbollari mavzusidagi respublika ilmiy-amaliy konferensiya materiallari to'plami. Toshkent davlat iqtisodiyot universiteti.

**II bo'lim (II часть; II part)**

20. Khamdamov et al. (2025). Asymmetric role of board diversity on green growth mechanism: Evidence from COP27 framework. Journal of Environmental Management, 375, 124113. (Scopus Q1)

21. Khamdamov et al. (2025). Integrating green finance and energy transitions for decarbonization: Policy pathways to achieve COP-29 goals in E7 economies. Journal of Environmental Management, 382, 125217. (Scopus Q1)

22. Khamdamov et al. (2025). A fuzzy decision-making model for enhancing sustainable tourism investments in climate-vulnerable destinations. Journal of Environmental Management, 380, 125151. (Scopus Q1)

23. Khamdamov et al. (2025). Does Green Governance Reflect Corporate Sustainability Performance? New Insight From G5 Countries. Corporate Social Responsibility and Environmental Management. (Scopus Q1)

24. Khamdamov, S. J. (2024). International cooperation and carbon finance: opportunities for reducing $CO_2$ emissions in uzbekistan. Bulletin news in New Science Society International Scientific Journal, 1(3), 5-17.

25. Khamdamov, S. J. (2024). $CO_2$ emission reduction strategies for the transportation sector in Uzbekistan. American Journal of Modern World Sciences, 1(2), 50-63

26. Khamdamov, S. (2024). Environmental analysis in Uzbekistan: Case study of Tashkent city. Miasto Przyszłości, 49, 1494–1499.

27. Khamdamov, S. (2024). Financial sector development and its role in promoting economic growth in Uzbekistan. International Journal for Gospodarka i Innowacje, 50, 181–186.

28. Khamdamov, S. (2024). Zero hunger in Uzbekistan: Strategies for sustainable agriculture and food security. Modern Scientific Research International Scientific Journal, 2(7), 93–96.

29. Khamdamov, S. J. (2024). The impact of Uzbekistan's fossil fuel dependency on $CO_2$ emissions and green growth. Bulletin news in New Science Society International Scientific Journal, 1(3), 31-42.

30. Khamdamov, S. J. (2024). The role of technology and innovation in driving economic growth in Uzbekistan. American Journal of Modern World Sciences, 1(1), 124-134.

31. Khamdamov, S. J. (2024). Green economy and inclusive growth in Central Asia: policy innovations. Gospodarka i Innowacje., 51, 335-341.

32. Khamdamov, S. J., & Usmanov, A. (2024). Decent Work and Economic Growth Boosting Employment and Economic Opportunities. Miasto Przyszłości, 50, 502-506.

33. Khamdamov, S. J., & Usmanov, A. (2024). Reducing Inequality Social and Economic Policies for Inclusive Growth. American Journal of Public Diplomacy and International Studies, 2(7), 181-185.

34. Khamdamov, S. J. (2024). Clean Water and Sanitation Infrastructure and Policy Solutions for Uzbekistan. European journal of business startups and open society, 4(7), 133–136.

35. Khamdamov, S. J., & Usmanov, A. (2024). Industry, Innovation, and Infrastructure Building Resilient and Sustainable Systems. American Journal of Public Diplomacy and International Studies, 2(7), 176-180.

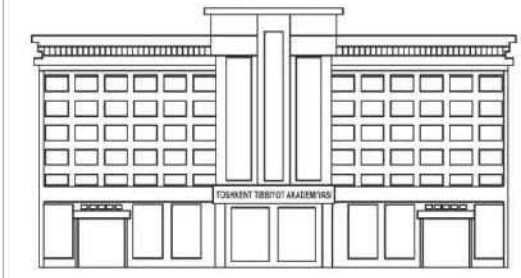
36. Khamdamov S.-J. (2024). Human and Social Development: Determining Areas of Adjustment with the 2030 and 2063 Development Goals in Developing Countries. European journal of business startups and open society, 4(6), 290–294.

37. Khamdamov S. et al. (2023). Exploring an interdisciplinary approach to sustainable economic development in resource-rich regions: An investigation of resource productivity, technological innovation, and ecosystem resilience. Resources Policy, 87, 104294. https://doi.org/10.1016/j.resourpol.2023.104294 (Scopus Q1)

38. Khamdamov S.-J et al. (2023). Nexus between natural resource depletion and rent and COP26 commitments: Empirical evidence from Vietnam. Resources Policy, 85, 104024. https://doi.org/10.1016/j.resourpol.2023.104024 (Scopus Q1)

39. Khamdamov, S. J., & Usmanov, A. S. (2024). Toshkent shahridagi havoning ifloslanishi: Sabablar va yechimlar. Insurance Market of Uzbekistan, 1(7). (OAK)

Annotatsiya “Toshkent tibbiyot akademiyasi axborotnomasi” jurnali tahririyati tomonidan tahrir qilingan.



M U H A R R I R I Y A T  V A  N A S H R I Y O T  B O ‘ L I M I

Bosishga ruxsat etildi: 14.08.2025-yil.
Bichimi 60x84 1/16 , “Times New Roman” garniturada raqamli bosma usulida bosildi.
Shartli bosma tabog‘i 4.5. Adadi: 100. Buyurtma: № 79.
Tel (99) 817 44 54.
Guvohnoma reyestr № 219951
“PUBLISHING HIGH FUTURE” OK nashriyotida bosildi.
Toshkent sh., Uchtepa tumani, Ali qushchi ko‘chasi, 2A-uy.