GREEN ECONOMY IN THE UNITED STATES OF AMERICA AND ARMENIA
(comparative analysis)

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Abstract

A "green economy," according to the United Nations Environment Programme, is an economy that promotes human well-being and social equity while reducing environmental risks and resource depletion. The three main pillars of a green economy are low-carbon development, resource efficiency, and social inclusion. The United States and Armenia, countries of different sizes and economic capabilities, are both taking steps towards sustainable development and a green economy. The country is developing solar energy, electric vehicles, air quality control, and efficient waste management. Armenia, although smaller and resource-limited, is actively involved in the development of solar energy, attracting international support, and stabilizing agriculture. The Armenian Masrik-1 solar power plant is an important step towards energy independence. Both countries have air pollution problems that require strict control and an increase in green spaces to solve them. Effective waste management and the development of recycling systems are vital for both. Overall, both the United States and Armenia are making important progress towards a green economy and sustainable development, but many challenges still lie ahead.

GEL code: O 2

Keywords: Green Economy , Sustainable Development, Renewable Energy ,Solar Energy, Air Pollution,Waste Management, Social Inclusion, Climate Change, Environment, Ecological Risks.

Introduction

According to United Nations Environment Programme (UNEP), green economy is "an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP). Green economy plays a major role in the well-being of a country's economic stability. Green economy is based on three pillars: low-carbon

development, resource efficiency, and social inclusion (UNEP). Green economy also plays a big role in a country's sustainable development. The United Nation defined sustainable development as "how we must live today if we want a better tomorrow, by meeting present needs without compromising the chances of future generations to meet their needs" (United Nation). Key sectors of the green economy include renewable energy, sustainable agriculture, eco-friendly industry, green transportation, waste reduction, and natural resource conservation. By transitioning to green economic models, countries can promote long-term resilience and reduce dependence on finite natural resources. In the world today many countries have implemented green economy, two of these countries are the United States of America and Armenia. The United States of America and Armenia are two countries with different economic views but both countries have in some way incorporated green economy and sustainable development in their country model. The United States of America, a large, industrialized country with vast resources while Armenia, a smaller, developing nation with significant environmental challenges and opportunities, have committed to sustainable development through renewable energy, green innovation, and environmental governance.

Findings

The United States of America, one of the world's largest economies and contributors to global emissions, has a unique responsibility and opportunity to lead in green economic transformation. Over recent years, federal, state, and local governments have implemented a variety of initiatives to transition toward cleaner and more sustainable practices. In August 2022, the U.S. Congress approved the Inflation Reduction Act (IRA) of 2022, combining the objectives of reducing domestic inflation ("Inflation Reduction Act of 2022 – Policies"). According to the article, "Inflation Reduction Act of 2022-Policies," the IRA includes a combination of grants, loans, tax provisions and other incentives to accelerate the deployment of clean energy, clean vehicles, clean buildings and clean manufacturing. Around $370 billion will be disbursed for measures dedicated to improving energy security and accelerating clean energy transitions ("Inflation Reduction Act of 2022 – Policies"). The United States of America uses and produces many different types and sources of energy, which are grouped into general categories such as primary, secondary, renewable, or fossil fuels (U.S. Energy Information Administration). Primary energy sources include fossil fuels, nuclear energy, and renewable sources of energy, and secondary energy source is electricity that is produced from primary energy sources (U.S. Energy Information Administration). According to the U.S. Energy Information Administration (EIA), renewable sources accounted for approximately 21% of total electricity generation in 2022, with wind and solar showing the most significant growth. One major way electricity is generation with solar is through solar panels. Solar panels capture the sun's energy and convert it into electricity to use in your home (Energy Saving Trust). As of February 2024 over 4,227,503 million US homes have solar panels attached on their roofs (Agopian). Another major issue in the United States of America is the air quality which is worsen by air pollution. Air pollution is the release of pollutants into the air, pollutants that are detrimental to human health

and the planet as a whole (Mackenzie and Turrentine). Emissions of air pollutants continue to play a big role in a number of air quality issues (US EPA). According to the United States Environmental Protection Agency, "In 2023, about 66 million tons of pollution were emitted into the atmosphere in the United States." The Clean Air Act of 1970 has been a crucial tool to reducing air pollution. The Clean Air Act is a comprehensive federal law that gives the U.S. Environmental Protection Agency (EPA) authority to regulate air pollutants and polluting industries (Hu). The Clean Air Act requires the EPA to set national health-based standards for air pollution. It also requires the government to review, update, and enforce these standards (Hu). The most effective way to control air pollution is to speed up our transition to cleaner fuels and industrial processes by switching over to renewable energy, maximizing fuel efficiency in our vehicles, and replacing our gasoline-powered cars with electric versions. According to the article, "U.S. share of electric and hybrid vehicle sales increased in the second quarter of 2024," by Monica Abboud, on the U.S.

Energy Information Administration website the percentage of hybrid, electric, and plug-in hybrid cars have increased about 19% from 2014. In the United States of America another factor that is critical to a green economy transition is having control over waste management. Sustainable waste management includes reducing the amount of materials used in a product, reusing products whenever possible, and recycling products if they cannot be reused. When natural resources are continually extracted to produce goods that are used in the United States of America before they are thrown into landfills, incinerators or the natural environment, results in the waste of precious resources and pollution that threatens our health, environment and the global climate. Over 28% of all U.S. garbage is packaging, amounting to 82 million tons of material that is typically thrown out after a product is purchased or used (Environment America). Almost all of America's trash can be reused and recycled. According to an article on Environment America's website these are some of the steps that can be promoted through a variety of policies and programs at the local, state and national levels to better manage waste: set a goal to achieve zero waste, make recycling and composting mandatory, require that goods be built to last and easy to repair, reuse, recycle or compost, ban the sale of single-use items that are not easily recyclable or compostable, including packaging, plastic bags and food service ware, invest in repair, reuse, recycling and composting facilities to support a circular economy, require producers to use recycled and reused materials in new products, and encourage businesses and governments to set procurement standards for recycled materials. As of today in the United States there are different trash bins for different items and if more people separated their trash, we would have less items go to waste.

Armenia although smaller in scale and resources then the United States of America has shown a strong commitment to green economy principles, especially in renewable energy, climate adaptation, and sustainable agriculture. Armenia is aligning its economic development with global sustainability standards with international assistance and government policy shifts. One of the international assistances is from the World Bank's Board of Executive Directors. They

approved a Development Policy Operation (DPO) in the amount of $116 million equivalent for Armenia to enable reforms aimed at promoting green, resilient and inclusive development (World Bank Group). DPO will help the Government of Armenia to build climate resilience and reduce vulnerabilities to future shocks. Another big international assistance is the Green Agenda project provided by the Stockholm Environment Institute and Sida, the Swedish International Development Cooperation Agency ("The Green Agenda Project: Armenia's Roadmap towards Sustainability"). According to the article, "The Green Agenda project: Armenia's roadmap towards sustainability," the Green Agenda is a decisive roadmap designed to cultivate a healthier environment for our citizens, administer our natural resources more effectively, and ultimately, lead us towards a more ecologically-friendly Armenia.

Armenia's energy system plays a vital role in its green economy development, offering both opportunities and challenges. The country's energy mix is heavily dependent on imported fossil fuels, with natural gas accounting for nearly 60% of primary energy consumption, most of which is imported from Russia and Iran (International Energy Agency). In contrast, electricity production is more diversified: nuclear power generates approximately 40% of electricity, while hydropower contributes around 25–30% ("Nuclear Power in Armenia - World Nuclear Association"). Natural gas is the main source of energy in Armenia ("ARMENIA ENERGY FACTSHEET 2022"). Solar energy is currently a small part of the grid but is rapidly expanding due to Armenia's favorable geographic conditions, boasting over 300 sunny days per year. On May 11, 2018 Armenia launched Masrik-1 the first large-scale solar power plant in the history of the country ("Time to Shine: Introducing Armenia's Solar Industry"). According to the World Bank, the Masrik-1 plant will improve long-term energy security by promoting the development of solar resources and reducing the country's dependence on imported natural gas. Today we see more houses with solar panels on their roofs and hopefully as time goes on the numbers will increase. This will be the most efficient way to preserve energy in Armenia. One of the major issues we currently have in Armenia is air pollution. In Yerevan, atmospheric air pollution with dust and nitrogen dioxide often exceeds the permissible limit concentration (Ecolur). Another region of Armenia that is polluted is Ararat. The town of Ararat is home to 2 major industrial firms: the Ararat Cement factory founded in 1927, and the "Geopromining Gold" recovery plant operating since 1970. There is a major controversy over the pollution and the toxic waste. The Ararat Gold Recovery extraction process involves first pulverizing the raw material, and then filtering out the gold using a cyanide nitrate chemical process. The soupy byproduct of the cyanide nitrate chemical process is both toxic and radioactive and collects in a tailing dam. Industrial activities contribute to air and soil pollution. According to a research done by the experts of the Czech "Arnika" NGO, together with the Armenian "Center for Community Mobilization and Support" and "EcoLur" NGOs found lots of pollutions and Inga Zarafyan, President of "EcoLur" Informational NGO, said: "We have a lot of pollution in the areas where the mining industry is developed. We collect data so that we can demand decisions and laws that protect people from irresponsible

businesses. The polluting organization must provide compensation for its pollution, but this principle does not apply to us." According to Yerevan Municipality, green areas in Yerevan have increased by 35 hectares during 2022-2023 (Ecolur). As stated in the article, “Sources of Atmospheric Air Pollution in Yerevan,” in 2024, the tree replacement program was launched in Yerevan, perennial trees in the center of Yerevan were cut down and replaced by new ones, which, being small and lacking foliage, cannot perform a full dust-absorbing function. Armenia is also rich with forests located in Dilijan which help with reducing overall air pollution.

Conclusion

Armenia needs to improve on the ways of reducing greenhouse gas emissions. Waste management is also a big issue in Armenia. Material is not used probably and trash is not sorted accordingly. In Yerevan, Nubarashen solid domestic waste landfill site is not originally designed and built according to any accepted standards, does not meet international or any technical, environmental and sanitary standards and is solely a place for garbage accumulation (Ecolur). Innovative Solutions for Sustainable Development of Communities (ISSD) is a non-profit, non-governmental organization whose main goal is to promote sustainable development through innovative projects in waste management, agriculture, education, circular economy, business, and women empowerment (“Recycle It! – Innovative Solutions for Sustainable Development of Communities”). Since November 2017, ISSD has been implementing a widespread initiative across Armenia, installing sorting bins for recyclable waste in both organizational settings (marked with green icons on the map) and public areas (identified by blue icons on the map). These bins are designated for plastic, paper, glass, and metal, making it easier for communities to participate in environmentally friendly practices (“Recycle It! – Innovative Solutions for Sustainable Development of Communities”). In conclusion, United States of America and Armenia have been taking steps toward sustainable development and a better green economy. In my opinion, Armenia should increase its’ green areas with big tall trees that can absorb the dust and pay attention more to waste management. Armenia should carry out macroeconomic assessments and identify key sectors where opportunities exist. Armenia has opportunities for green growth, particularly in energy savings, renewable energy, agriculture, and manufacturing.

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ԿԱՆԱՉ ՏՆՏԵՍՈՒԹՅՈՒՆԸ ԱՄԵՐԻԿԱՅԻ ՄԻԱՑՅԱԼ ՆԱՀԱՆԳՆԵՐՈՒՄ ԵՎ Հ ԱՅԱՍՏԱՆՈՒՄ

(համեմատական վերլուծություն)

Նինո Աբեսաձե
Թբիլիսիի պետական համալսարան
Արմինե Սարդարյան
Արարատի պետական բժշկական քոլեջ
Մարուսյա Մեջլումյան

Արարատի պետական բժշկական քոլեջ

«Կանաչ տնտեսությունը», ըստ ՄԱԿ-ի Շրջակա միջավայրի ծրագրի, նպաստում է մարդկանց բարեկեցությանը և սոցիալական հավասարությանը՝ միաժամանակ նվազեցնելով բնապահպանական ռիսկերը և ռեսուրսների սպառումը: Կանաչ տնտեսության երեք հիմնական հիմնասյուներն են՝ ցածր ածխածնային զարգացումը, ռեսուրսների արդյունավետությունը և սոցիալական ներառականությունը: ԱՄՆ-ը և Հայաստանը, որպես տարբեր չափերի և տնտեսական հնարավորությունների երկրներ, քայլեր են ձեռնարկում կայուն զարգացման և կանաչ տնտեսության զրգացման ուղղությամբ, զարգացնում են արևային էներգիաի արտադրությունը, էլեկտրական մեքենաների կիրառումը, օդի որակի վերահսկումը և թափոնների արդյունավետ կառավարումը: Հայաստանը, թեև ավելի փոքր և ռեսուրսներով սահմանափակ, այնուամենայնիվ ակտիվորեն ներգրավված է արևային էներգիայի զարգացման, միջազգային աջակցություն ներգրավելու և գյուղատնտեսության կայունացման գործում: Հայկական Մասրիկ-1 արևային էլեկտրակայանը կարևոր քայլ է էներգետիկ անկախության ճանապարհին: Երկու երկրներն էլ ունեն օդի աղտոտվածության խնդիրներ, որոնք պահանջում են խիստ վերահսկողություն և կանաչ տարածքների ավելացում՝ դրանք լուծելու համար: Թափոնների արդյունավետ կառավարումը և վերամշակման համակարգերի զարգացումը կենսական նշանակություն ունեն երկուսի համար:

Հոդվածում ներկայացվում են վերլուծություններ, նշելով, որ ընդհանուր առմամբ, և՛ Միացյալ Նահանգները, և՛ Հայաստանը կարևոր առաջընթաց են գրանցում դեպի կանաչ տնտեսություն և կայուն զարգացում,՝սակայն ունենալով բազում մարտահրավերներ:

Հիմնաբառեր - կայուն զարգացում, վերականգնվող էներգիա, արևային էներգիա, օդի աղտոտվածություն, թափոնների կառավարում, սոցիալական ներառում, կլիմայի փոփոխություն, շրջակա միջավայր, էկոլոգիական ռիսկեր: