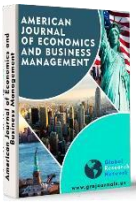

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Article

Experience of Increasing The Efficiency of The Service Company "Green Clean Maine" Based on The Principles of The Green Economy

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Abstract: There is a shift towards sustainability across the world, and the service companies are also coming out to incorporate the concept of green economy. Although one has increasingly witnessed evidence of an industrial sector that has embraced economic performance in the environment, the same cannot be said of household services that have not been exploited by practical models. A small databank exists on the implementation of the Triple Bottom Line and Circular Economy in small-size service firms, especially in the developing world. The present research examines the operational practice of one of the American eco-cleaning firms, Green Clean Maine, in order to determine how the fundamentals of sustainability are used to promote efficiency and profitability of its services. Between the years 2019 and 2024, the firm realized a 60, 123, 37, and 65 improvement in terms of revenue growth, net profit growth, the reduction of CO 2 emission, and renewable energy utilization respectively. The research team presents a unique example of effective combination of economic, environmental, and social aspects in a small service company, which can be transferred to such countries as Uzbekistan. The results imply that circular and green economy solutions implemented in the household services scale will become possible and help sustain the development of emerging economies.

Keywords: Green Economy, Triple Bottom Line (3bl), Circular Economy, Environmental Services, Sustainable Development, Service Efficiency, Cleantech, Green Clean Maine, Localization Strategy, Central Asia, Environmental Protection, Financial Efficiency, Carbon Emissions, Renewable Energy, Social Responsibility

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1. Introduction

The green services sector has grown rapidly in recent years, and the issue of balancing economic efficiency and environmental protection remains a pressing one[1]. Accordingly, as the world population continues to grow, addressing this issue will become a major challenge for every country. This study examines the experience of Green Clean Maine, a company based in the US state of Maine, in improving the efficiency of its services based on green principles, using the theoretical framework of Triple Bottom Line (3BL) and Circular Economy. America, which is among the top five in terms of technological innovation, is currently moving away from traditional manufacturing or service provision and toward resource-efficient and low-cost manufacturing activities[2].

Green Clean Maine is a local, eco-friendly cleaning service that has been in business since 2007. The company serves over 400 loyal customers using non-toxic, handcrafted formulas and a professional staff. The company donates 1% of its profits to local environmental and educational organizations[3].

By organizing this type of service in Uzbekistan, we will contribute to improving the environmental sustainability of our country and improve the quality of services provided[4].

It is not without reason that 2025 has been named the "Year of Environmental Protection and Green Economy" in our country. The beautiful natural landscapes, clean air and healing waters of Uzbekistan have fascinated people for centuries. However, with the expansion of industry, the growth of energy demand and changing attitudes towards the environment, serious problems such as climate change, pollution and water shortages have arise[5]. In response to this, the nationwide "Green Space" project was introduced. This initiative revived the ancient tradition of planting trees and creating green spaces on unused lands, reflecting deep cultural values, and further strengthened the sense of environmental protection among the population[6].

Literature Review

Although the impact of the green economy concept on the service sector has been noted in many studies, there are relatively few studies on the implementation of environmental efficiency in household services[7]. Based on the Triple Bottom Line model proposed by Elkington, many studies by scholars such as Hart and Milstein and Jackson have emphasized the importance of assessing the efficiency of services not only from an economic perspective but also from an environmental and social dimension[8].

Kramer argued in his 2011 article that green startups and innovations create a competitive environment for companies to develop new services and maintain their competitive advantage [2]. Similarly, Chen et al. empirically demonstrated that energy efficiency and customer loyalty are positively correlated through a company's Green Clean, i.e., if consumers are convinced that they are purchasing a product or service that is less harmful to the environment than other products, customer loyalty increases accordingly[9].

At the same time, we want to create a theoretical basis for applying this experience in Asian countries, given that the existing literature has only conducted enterprise-level studies aimed at improving the efficiency of the US service sector through green economy principles. Therefore, we will study the experience of Green Clean Maine and consider ways to fill this gap by applying it in Asian countries, in particular in Uzbekistan[10].

2. Materials and Methods

The approach that has been employed in this paper is centered at systematic and qualitative approach, with the view of determining the effectiveness of the green economy principles implementation into the service sector. Based on the example of a U.S-based eco-cleaning company Green Clean Maine, the study utilized monographic observation and content analysis to analyze the data on operational factors, eco-performance, and social and economic impact of the company in 2019-2024. Financial data, including the increase in revenues, net profit, and cost, as well as environmental indicators like the level of Co 2 emissions, water consumption amount, the level of waste reduction and employment of renewable sources of energy were assessed through statistical methods of abstraction. These data could be traced to the publicly present reports and performance overviews offered by the company. Comparison of the Triple Bottom Line and Circular Economy theoretical building blocks with the practices of the firm followed a logical deduction and synthesis. Comparative analysis has also been perform in terms that the results of the strategy of Green Clean Maine are compared with the models of sustainability standards existing in literature. When evaluating the advantages of applying

this model to the specifics of the Uzbekistan state and other Central Asian states, the research applied extrapolation methodology based on socio-economic data of the region and environmental conditions to structure a model of localization as the one that assumes adaptation to the specifics of the country. Further, the study introduced exploratory forecasting to introduce short-term, medium-term, and long-term implementation routeways. This versatile research methodology provides the concept of empirical reliability on the one hand and theoretical focus on the other one, thus making it possible to provide an in-depth comprehension of how the principles of green economy may be applied to the development of the practical positive changes in the sphere of service efficiency, financial results, and ecological responsibility in developing markets.

3. Results and Discussion

For Green Clean Maine, the first pillar of its Triple Bottom Line approach, Profit, has been a huge success. The company has gained a competitive advantage by significantly reducing operating costs through the use of green technologies. Chemical costs were reduced by 35-40% compared to traditional cleaning products, product storage and transportation costs were reduced by 25% through local manufacturing, and healthcare costs were significantly reduced by reducing employee illness by 30%. Customer retention rates were also high, with 85% repeat customers (compared to the industry average of 70%), a customer satisfaction score of 4.8/5.0, and 92% repeat customers[11]. These numbers show that the company not only achieved its environmental goals through a sustainable business model, but also ensured financial sustainability.

As illustrated in Table 1, The second pillar of the Triple Bottom Line Theory, social impact, is achieved through ensuring the well-being of employees and the community at Green Clean Maine.

Table 1. Work done by Green Clean Maine.

The level of employee productivity and satisfaction showed high indicators:	**The company paid special attention to developing relations with society:**
The staff turnover rate was only 15%, compared to the industry average of 35%.	donated 1% of his annual income to local charities
Sick days have decreased by 40% per year employees actively participated in the volunteer program more than 200 hours per year	Educational programs on ecological cleaning were organized for 50+ families.

Source: Example: www.greencleanmaine.com (data and reports)

The next step is the third pillar (Planet), which is focused on protecting the environment, and the Circular Economy approach has become one of the strengths of Green Clean Maine. Through energy optimization, transportation energy resulted in 40% less fuel consumption through local servicing, small-scale local manufacturing, and 60% less plastic consumption in packaging materials, significantly reducing the environmental impact[12]. Through a waste reduction program, chemical waste was reduced by 95%, 80% of all packaging materials were recycled, and water consumption was reduced by 20% compared to traditional methods. The implementation of the Circular Economy model developed in three main areas: the use of local resources and 70% recycled materials through input optimization, process innovation through concentrated formulas, 25% less transportation through microfiber technology and GPS tracking, 100% biodegradable products through performance, a customer packaging take-back program, and an environmental knowledge sharing system[13].

As it can be seen from Table 2, the company's annual revenue has increased by 1.6 times by 2024, and the number of customers has also increased by 60%. As a result of the Green Premium effect, the number of people employed in this sector has almost doubled, consumers are willing to pay 15-20% more for environmental services, which creates additional sources of income for environmental companies. Management requirements, especially strict requirements for the use of chemicals, are pushing companies to find sustainable solutions.

Table 2. Financial indicators (2019-2024).

Indicator	2019 (Previous)	2024 (after)	Change
Annual income	450,000 US dollars	720,000 US dollars	+60%
Operating costs	320,000 US dollars	430,000 US dollars	+34%
Net profit	130,000 US dollars	290,000 US dollars	+123%
Number of clients	250	400+	+60%
Number of employees	8	15	+87%

Resource optimization is implemented through digital integration using IoT and AI, which helps improve operational efficiency and reduce waste. Cyclical business models are widely used, in particular the Product as a Service model. In line with these global trends, Green Clean Maine has strengthened its position as a leader in the premium segment in the local market, actively implements new environmental technologies and has established effective partnerships with all stakeholders[14].

As described in Table 3, Since Green Clean Maine began working with this new approach, carbon emissions have decreased by 37%, water consumption has dropped from 15 to 12 liters by 2024, and most impressively, renewable energy has increased from 0 to 65%. Despite the company's success, there are several important limitations and challenges. The main challenge is the limitation of scale, and since it is a small, local company, the global impact remains limited.

Table 3. Environmental indicators

Indicator	2019	2024	Improvement
CO2 emissions (tons/year)	12.5	7.8	-37%
Water consumption (liters/service)	15	12	-20%
Waste (kg/month)	45	18	-60%
Renewable energy (%)	0%	65%	+65%

1. Capital constraints limit the ability to invest in new technologies, slowing down the implementation of innovative solutions[15].
2. Market segmentation is limited to serving only the high-income segment of customers, making it difficult to reach the broader mass market.
3. Seasonal variability, particularly the decline in demand for services during the winter months, affects financial stability.

Localization Strategy in the Context of Uzbekistan

A comprehensive localization strategy is needed to implement the Green Clean Maine experience in the Uzbek context. In terms of local resources, raw materials produced in the Uzbek chemical industry, natural cleaning products based on local plants, and renewable

energy sources, in particular solar energy, can be used. Target markets should include large cities such as Tashkent and Samarkand, high-income families and businesses, hotels, and office buildings. Technological adaptation should include the introduction of ordering services through mobile applications, online payment systems, GPS tracking, and route optimization systems. In terms of local innovation, modernization of traditional Uzbek cleaning methods, cooperation with local universities and research institutes, and the organization of entrepreneurship programs for youth are of great importance.

In Uzbekistan, effective financial models are needed to implement a sustainable service model. Partnerships with microfinance institutions, startup acceleration programs, and the use of government subsidies and tax incentives for initial investments are needed. Developing a subscription-based model, B2B corporate contracts, and franchising opportunities are important to create a sustainable revenue stream. Specific approaches are also needed in other Central Asian countries. In Kazakhstan, pilot projects should be implemented in Almaty and Nur-Sultan, cooperation with oil companies, and eco-certification programs. In Kyrgyzstan, integration with the tourism sector, the use of hydropower, and rural development programs in Issyk-Kul and Bishkek is important. In Tajikistan, cooperation with cleaning services, the textile industry, and trade in Dushanbe is needed.

A step-by-step approach is needed to successfully implement a sustainable service model in Central Asia.

Short-term strategies (1-2 years) include conducting small pilot projects in Tashkent, establishing relationships with local distributors and suppliers, organizing training programs for local employees, and adapting to local legal requirements.

Medium-term plans (3-5 years) include expansion into other regions, diversification into new environmental services, integration of AI and IoT technologies, and regional cooperation with Central Asian countries. Market research, risk assessment, and continuous improvement processes should be carried out at each stage. It should not be overlooked that developing strategic plans that take into account local cultural factors and economic conditions is of great importance.

The long-term forecast (5-10 years) envisages the transformation of Central Asia into a regional hub of environmental services and the creation of a fully sustainable ecosystem. As a regional hub, it is necessary to establish a center for environmental services for Central Asia, develop export opportunities for products, and create research and development centers to develop innovative solutions.

By implementing a fully circular economy model, it is possible to achieve efficient resource circulation, minimal waste, and mutual benefit for all stakeholders. Close cooperation between the government, private sector, educational institutions, civil society, and international organizations is necessary to create a sustainable ecosystem. In the future, this model can serve as a model for other developing economies and contribute to achieving global sustainable development.

4. Conclusion

Green Clean Maine's experience has clearly demonstrated that providing services based on the principles of the green economy is not only environmentally beneficial, but also highly cost-effective. With the Triple Bottom Line approach, the company successfully balances the 3Ps (profit, people and planet), creating shared value for all stakeholders. In terms of financial performance, the company achieved a 123% increase in net profit, confirming that the sustainable business model is economically viable. In terms of environmental impact, the 37% reduction in CO2 emissions made a significant contribution to efforts to reduce global climate change. In terms of creating social value, high employee satisfaction and deep integration with society ensured the company's long-

term sustainability. Together, these indicators confirm the practical implementation of the Triple Bottom Line approach in the sustainable services sector.

When adapting the Green Clean Maine model to Central Asian countries, several important factors must be taken into account. Local resources and cultural characteristics must reflect the unique ecological and social context of each country, which requires an approach based on local plants, traditional cleaning methods and cultural values. The level of economic development and market needs require the creation of different pricing and service delivery models adapted to the purchasing power of different countries, consumer behavior and market development. The availability of technological infrastructure and human capital provides flexibility in digital solutions and the definition of workforce training programs.

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