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Sustainability in Action: The Smart Gardeners

Business Plan

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Abstract: *This research paper presents a comprehensive business plan for a gardening business that offers a range of services, including garden design, lawn care, tree and shrub pruning, seasonal plantings, hardscape installation, landscape design, and installation. The research emphasizes the importance of adapting to modern business practices, such as implementing an artificial intelligence integrated mobile application for booking appointments and selling gardening materials online. These innovative approaches could increase accessibility and convenience for clients and help the business reach a wider audience. Overall, this research paper serves as a valuable resource for entrepreneurs and business owners interested in establishing or expanding their gardening business with a focus on sustainability and modern business practices. The findings suggest that the gardening business can provide a reliable and professional service that meets the needs of a diverse range of clients. Overall, this research paper serves as a valuable resource for entrepreneurs and business owners who are interested in establishing or expanding their gardening business.*

Keywords: *Gardening business, Sustainable practices, Business Plan, Mobile application, Landscape design.*

I. INTRODUCTION

Gardening is not only a leisure activity but also an essential practice for maintaining a healthy lifestyle. However, with today's fast-paced and busy lifestyle, many people find it challenging to maintain their gardens, and this has led to an increase in demand for professional gardening services. In India, gardening is an integral part of the culture, and most households have a garden or a lawn. To meet the growing demand for gardening services and provide an opportunity for students looking for part-time work, we have come up with a business plan that specializes in residential gardening care.

The objective of this research paper is to present a comprehensive business plan for a gardening business that offers a range of services to maintain and enhance outdoor spaces. This paper emphasizes the importance of adapting to modern business practices, such as implementing a mobile application for booking appointments and selling gardening materials online. The use of eco-friendly practices and materials to minimize the environmental impact of the business is also highlighted. The research outlines the unique approach of the company to develop customized solutions for clients based on their specific requirements and budget.

The paper aims to provide valuable insights to entrepreneurs and business owners interested in establishing or expanding their gardening business with a focus on sustainability and modern business practices. The research findings suggest that the gardening business can provide a reliable and professional service that meets the needs of a diverse range of clients. The paper concludes by emphasizing the potential of the gardening business to not only provide a source of income for students but also contribute to the overall health and well-being of the community.

II. REVIEW OF LITERATURE

The article [1] explores the social dimension of sustainable development policies by linking issues of health, education, community development, and food security with the use of green space in towns and cities. The authors emphasize the importance of urban open spaces, particularly parks and gardens, in promoting environmental justice and equity.

According to the authors, community gardening can be an effective policy tool for promoting the social dimension of sustainability and environmental justice in urban areas. Community gardens are often the result of civil rights struggles and generate local and participative forms of neighbourhood-level politics.

The authors argue that the use of urban open spaces for parks and gardens is closely associated with environmental justice and equity [2], Urban open spaces provide not only recreational opportunities but also access to fresh produce and the opportunity for social interaction and community building. Community gardens, in particular, provide a means for urban residents to produce their own food, increasing access to healthy food options and reducing food insecurity.

In conclusion, the authors argue that community gardens have significant potential to contribute to the social dimension of sustainable development and environmental justice in urban areas. The authors suggest that policymakers should consider community gardening as a viable means of promoting community development, reducing food insecurity, and increasing access to green space in urban areas.

Gardening has been a popular activity for centuries [3] with many people finding it a rewarding and therapeutic pastime. In recent years, however, gardening has also gained attention for its potential environmental and health benefits. Studies have shown that gardening can improve mental health, reduce stress, and increase physical activity levels. In addition, gardening can contribute to environmental sustainability by promoting biodiversity, reducing carbon emissions, and improving air and water quality.

One way to promote gardening and its benefits is through community gardening initiatives. [4] Community gardens have been shown to provide numerous social, health, and environmental benefits to participants and surrounding communities. Community gardens can help build social connections, foster a sense of community, and increase access to fresh and healthy produce. Furthermore, the use of urban open spaces for parks and gardens is closely associated with environmental justice and equity. Community gardening can be an effective policy tool for promoting the social dimension of sustainability and environmental justice in urban areas.

In the context of business, gardening services can offer a valuable solution to individuals and organizations that lack the time or expertise to maintain their own gardens. Modern business practices, such as implementing a mobile application for booking appointments and selling gardening materials online, can increase the accessibility and convenience for clients and help the business reach a wider audience.

Online shopping based on mobile applications have revolutionized the way people shop for goods and services, including gardening supplies. A study [5] found that mobile applications can improve the convenience of purchasing gardening materials, increase the variety of available products, and enhance customer satisfaction. Furthermore, mobile applications allow garden stores to personalize their offers and promotions to their customers' preferences and interests, increasing their engagement and loyalty.

Plant diseases can cause significant damage to crop and ornamental plants, resulting in substantial economic losses. AI-integrated mobile applications have been developed to help identify plant diseases and provide appropriate treatments. According to a study by [6], AI-based plant disease detection systems can improve the accuracy and speed of disease diagnosis, leading to more effective treatments and higher crop yields. These applications have the potential to revolutionize the field of plant pathology, providing valuable tools for farmers and gardeners.

Terrace gardening is becoming increasingly popular among urban residents who desire fresh and healthy produce at home. With limited space and resources, terrace gardening can provide a sustainable and cost-effective solution for growing fruits and vegetables for personal consumption.

A study [7] examines the feasibility and benefits of terrace gardening in urban areas. The study found that terrace gardening can significantly reduce household expenses on groceries and improve the quality and safety of the produce consumed. The study also highlights the potential of terrace gardening in promoting food security and self-sufficiency.

In a separate study [8] the authors explore the impact of terrace gardening on the mental health and well-being of individuals. The study found that engaging in terrace gardening activities can reduce stress and anxiety, improve mood and self-esteem, and increase a sense of connection with nature.

Additionally, AI modelling can aid in designing and optimizing terrace gardens for efficient use of space and resources. A study by [9] utilized AI modelling to design an optimized terrace garden layout for growing a variety of fruits and vegetables. The study found that the optimized layout resulted in higher yield and reduced water usage compared to traditional gardening methods.

The literature suggests that terrace gardening can provide numerous benefits, including cost savings, improved food safety and quality, and positive impacts on mental health and well-being. The integration of technology, such as AI-based mobile applications and modelling, can further enhance the efficiency and effectiveness of terrace gardening practices.

III. MARKET ANALYSIS

A. Demographic And Geographic

Target market analysis is a crucial aspect of any business plan. Our gardening business will focus on serving the residents of Bengaluru initially and expanding its presence in other metropolitan cities. The target market will primarily include working professionals, elderly individuals, and families who are interested in gardening but do not have the time or expertise to maintain their own gardens.

In terms of demographics, our target market will be diverse in terms of age, income, and education. We will cater to individuals who are passionate about gardening and want to create a beautiful outdoor space, as well as those who simply want to ensure that their garden is well-maintained. Our customers will be willing to pay for high-quality gardening services and products.

In terms of geography, our target market will be located in and around Bengaluru. The city has a large population of working professionals and a growing number of retirees, making it an ideal location for our gardening business. As we expand, we will target other metropolitan cities that have a similar demographic profile and a growing interest in gardening.

By focusing on the demographic and geographic aspects of our target market, we can tailor our marketing efforts and product offerings to meet the needs and preferences of our customers. This will allow us to build a strong customer base and establish our business as a leading provider of gardening services and products in the region.

B. Competition Analysis

Our online gardening business in Bengaluru, faces competition from various sources. These include established gardening companies that have been operating in the area for several years, as well as new start-ups entering the market. Other potential competitors include local nurseries, DIY stores, and big-box retailers that offer gardening products and services.

To stay competitive, our business must offer unique and innovative products and services that differentiate us from competitors. These could include the use of AI technology for plant disease identification, offering eco-friendly gardening solutions, and providing a wide range of products and services through our mobile application.

We must also carefully analyze the pricing strategies of our competitors and ensure that our prices are competitive without sacrificing quality. In addition, we must build strong relationships with our customers through exceptional customer service and personalized attention to their needs, by staying up to date with industry trends and offering unique and competitive services, our online gardening business can establish a strong presence in the Bengaluru market and beyond.

C. Industry Trends And Growth Potential

The gardening industry has witnessed a significant increase in demand in recent years, as more people are interested in maintaining their outdoor spaces. This trend is expected to continue in the future, as people become more aware of the benefits of gardening and the need for sustainable practices.

In India, the gardening industry is still in its nascent stage but is rapidly growing with increasing urbanization and a rise in disposable income. With the emergence of e-commerce, online gardening businesses have gained momentum in the Indian market, offering a convenient and accessible option for customers.

The growth potential for our online gardening business in Bengaluru is substantial, given the city's high population density and the increasing interest in sustainable living practices. Additionally, the city's tropical climate is favorable for gardening, making it an ideal location for our business.

Moreover, our business is not limited to Bengaluru, as we have plans to expand to other metropolitan cities in India. This expansion can further contribute to the growth potential of our business, as it will increase our reach and enable us to tap into new markets, the industry trends and growth potential for our online gardening business are promising, and we are confident that our innovative approach and focus on sustainability will enable us to establish ourselves as a leading player in the Indian gardening industry.

IV. BUSINESS STRATEGY

Our business strategy is to provide high-quality gardening products and services at an affordable price to customers who don't have the time or expertise to maintain their own gardens. We will leverage technology to provide a seamless and convenient customer experience, offering a mobile app and website for easy ordering and scheduling. We will also focus on building long-term relationships with our customers through exceptional service and personalized attention.

A. Business Model

Our business model is based on a combination of product sales and service offerings. We will sell a wide range of gardening products, including seeds, plants, shrubs, succulents, samplings, trees, fertilizers, pesticides, soil, grow bags, coco peat, and gardening equipment. In addition, we will offer various gardening services like lawn mowing, pruning, fertilizing, terrace garden setup, and other related services. We will generate revenue through the sale of products and services, as well as through ongoing maintenance contracts with our customers.

We provide our customers with a mobile app and website that will allow them to easily browse and purchase our products and services. The app will also feature an AI-powered tool that can diagnose common plant diseases and provide recommendations for treatment. This feature will add value to our business and set us apart from our competitors. The mobile app and website will also allow customers to schedule appointments with our team for gardening services, making it easy and convenient for them to maintain their gardens. Our focus on technology and convenience will ensure that we provide a seamless customer experience that meets the needs of modern-day consumers.

B. Value Proposition

Our value proposition is to provide a convenient, reliable, and affordable solution for customers who want to enjoy the benefits of a beautiful and well-maintained garden without the hassle of doing it themselves. We will offer a wide range of high-quality gardening products and services, backed by personalized attention and exceptional customer service. Our mobile app and website will provide a seamless and convenient customer experience, making it easy for customers to order products and schedule services.

C. Sales and Marketing Plan

Our sales and marketing plan will focus on building brand awareness, generating leads, and nurturing customer relationships. We will leverage digital marketing channels like social media, search engine optimization, and online advertising to reach our target audience. We will also participate in local events and community outreach programs to build relationships with potential customers. Once we have established a customer base, we will focus on providing exceptional service and building long-term relationships through ongoing communication and personalized attention.

D. Financial Plan

Our financial plan is based on a combination of startup funding and ongoing revenue from product sales and services. We will seek startup funding through a combination of equity investment and bank loans. Our revenue model is based on product sales and service offerings, with ongoing revenue generated through maintenance contracts with our customers. We will focus on maximizing revenue while keeping costs under control, with a goal of achieving profitability within few years of operation.

TABLE - I
FUNDING REQUIREMENTS

Particulars	Amount	Own Contribution (50%)	Investor's Contribution (25%)	Bank Loan (25%)
Land, Office, and Vehicles (Lease)	10,00,000	5,00,000	2,50,000	2,50,000
Tools, Equipment, and Machinery	2,00,000	1,00,000	50,000	50,000
Other current assets	3,00,000	1,50,000	75,000	75,000
Working Capital	2,00,000	1,00,000	50,000	50,000
App Development, Web designing	1,00,000	50,000	25,000	25,000
Stock	2,00,000	1,00,000	50,000	50,000
Other Expenses	1,00,000	50,000	25,000	25,000
Reserve Funds	4,00,000	2,00,000	1,00,000	1,00,000
Total	₹ 25,00,000	₹ 12,50,000	₹ 6,25,000	₹ 6,25,000

TABLE – II

CASH FLOW PROJECTIONS	Year 1	Year 2	Year 3	Year 4	Year 5
CASH REVENUE					
Revenue from Product, Sales	600000	750000	1050000	1470000	2058000
Revenue from Service, Sales	1000000	1250000	1750000	2450000	3430000
TOTAL CASH REVENUES	1600000	2000000	2800000	3920000	5488000
CASH DISBURSEMENTS					

Cash Payments to Trade Suppliers	200000	210000	220500	231525	243101.25
Salaries and Wages	2000000	2100000	2205000	2315250	2431012.5
Promotion Expense	400000	420000	441000	463050	486202.5
Land Rent	100000	105000	110250	115762.5	121550.63
Vehicle Rent	100000	105000	110250	115762.5	121550.63
Telecommunications /Internet	20000	21000	22050	23152.5	24310.13
Utilities Payments	100000	105000	110250	115762.5	121550.63
TOTAL CASH DISBURSEMENTS	2920000	3066000	3219300	3380265	3549278.25
CASH FLOW	-1320000	-1066000	-419300	539735	1938721.75
OPENING CASH BALANCE	2500000	1180000	114000	-305300	234435
CLOSING CASH BALANCE	1180000	114000	-305300	234435	2173156.75

CASH FLOW PROJECTIONS

TABLE - III

PROFIT & LOSS STATEMENT PROJECTION

Income Statement	Year 1	Year 2	Year 3	Year 4	Year 5
REVENUE					
Services	1000000.00	1250000.00	1750000.00	2450000.00	3430000.00
Products	600000.00	750000.00	1050000.00	1470000.00	2058000.00
Total Revenue	1600000.00	2000000.00	2800000.00	3920000.00	5488000.00
EXPENSES					
Materials	200000.00	250000.00	312500.00	390625.00	488281.25
Salary & Wages	2000000.00	2160000.00	2332800.00	2519424.00	2720977.92
General and Administration (G&A)					
Accounting and Legal Fees	20000.00	20000.00	20000.00	20000.00	20000.00
Advertising and Promotion	300000.00	300000.00	300000.00	300000.00	300000.00
Insurance	15000.00	15000.00	15000.00	15000.00	15000.00
Office Rent	100000.00	100000.00	100000.00	100000.00	100000.00
Telephone	20000.00	20000.00	20000.00	20000.00	20000.00
Utilities	100000.00	100000.00	100000.00	100000.00	100000.00
TOTAL EXPENSES	2755000.00	2965000.00	3200300.00	3465049.00	3764259.17
NET INCOME	-1155000.00	-965000.00	-400300.00	454951.00	1723740.83

TABLE - IV

BREAK EVEN ANALYSIS

Volume of Service	Fixed Costs	Variable Costs	Total Cost	Income	Marginal Income	Net Profit
Units	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
96	50000	48000	98000	96000	48000	-2000
97	50000	48500	98500	97000	48500	-1500
98	50000	49000	99000	98000	49000	-1000
99	50000	49500	99500	99000	49500	-500
100	50000	50000	100000	100000	50000	0

101	50000	50500	100500	101000	50500	500
102	50000	51000	101000	102000	51000	1000
103	50000	51500	101500	103000	51500	1500
104	50000	52000	102000	104000	52000	2000

Table I presents the financial requirements for our business, indicating that a total of INR 25 Lakhs is needed, of which 50% will come from the owner's contribution, 25% from angel investors, and the remaining 25% from a bank loan.

Table II presents the five years cash flow projection of our company with the cash flow, opening cash balance, and closing cash balance for each year. The business has negative cash flow in the first three years but manages to maintain a positive closing cash balance, indicating it has enough cash reserves to sustain its operations. The trend reverses in year 4 and 5, with positive cash flows indicating potential for long-term profitability.

Table III projects Profit and Loss (P&L) statement for a business for five years. The business is projected to incur losses in the first three years, with negative net income values, but the trend reverses in years 4 and 5, with the business projected to make a profit. The P&L statement and cash flow projection provide different perspectives on the financial health of the business. The cash flow projection indicates negative cash flows in the first three years, while the P&L statement indicates negative net income during the same period. However, the business has maintained a positive closing cash balance, suggesting other sources of funding, such as loans or equity, to cover its expenses.

Table IV projects the breakeven analysis for our company, as there are many products and services available in our business, break even is done only for a particular product or a service for example let's take lawn mowing as an example, for which we can assume fixed cost is Rs.50,000 variable cost is Rs.500 and Unit Price is Rs.1000, now by calculating break even we find that the particular lawn mowing service will break its even at its 100th service and start making profits.

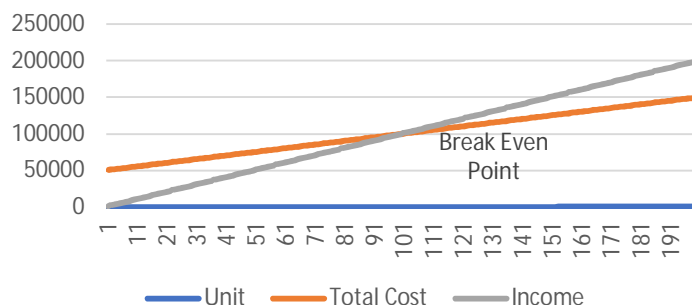


Figure 1. Projected Break Even

V. SUSTAINABLE AND ECO-FRIENDLY PRACTICES

Our gardening business values sustainability and aims to reduce our environmental impact through eco-friendly materials and practices. We promote sustainability in the gardening industry by emphasizing rainwater harvesting, solar-powered equipment, and planting native species. We educate our customers about the benefits of sustainable gardening practices for a greener and more sustainable future.

A. Sustainability

Sustainability is vital in the gardening industry to ensure a healthy environment. As a gardening business, we prioritize sustainability by using organic products, water conservation methods, and sustainable gardening practices. Our commitment to sustainability helps create a healthy and eco-friendly ecosystem.

B. Environmental Impact

The gardening industry can reduce environmental impact by implementing various strategies such as water conservation, composting, using organic gardening practices and products, promoting native plant species, using sustainable packaging, and energy conservation. Our business aims to incorporate these strategies by promoting sustainable and eco-friendly practices and products, encouraging organic gardening techniques, promoting native plant species, and using eco-friendly packaging materials. We also provide resources to help customers reduce their environmental impact.

C. Eco-Friendly Practices

Our gardening business prioritizes the use of eco-friendly materials and practices to minimize the environmental impact. We ensure that our products are made from sustainable materials and encourage customers to adopt sustainable gardening practices. We promote the use of recycled materials in our products and packaging, reduce their carbon footprint by using electric vehicles for delivery, and educate customers on the importance of sustainability in gardening. Their gardening services prioritize the use of eco-friendly practices, and we aim to create a sustainable future for the planet while providing high-quality products and services.

VI. BUSINESS MODEL CANVAS

Business Model Canvas	Designed for: Smart Gardeners	Designed by:	Date:	Version: 5
<p>Key Partners</p> <ol style="list-style-type: none"> Gardening Professionals Gardening Equipment suppliers Nurseries and gardens Garden planners Graphic designers Maintenance Team Follow-up Team Agrochemical suppliers. (Fertilizer, Pesticide, Manure) Land and Vehicle Leasing agency. App developers Website designers Advertising and Marketing Agencies Drivers Delivery Agencies (Dunzo, DHL, Blue Dart) <p>Cost Structure</p> <ol style="list-style-type: none"> Product cost (seeds, lawn grass, plants, fertilizers, pesticides) Equipment and tools cost (Gardening equipment, lawn mower, etc.) Labor cost (gardeners, Agri, and horticulture graduates) Advertisement costs 	<p>Key Activities</p> <ol style="list-style-type: none"> Garden planning Customer acquisition Providing gardening solutions Customer satisfaction Lawn mowing Laying of lawn Terrace Gardening <p>Key Resources</p> <ol style="list-style-type: none"> Gardening Equipment Gardeners Agri and Horticulture graduates Tech Support Manpower Seeds Website Mobile App Vehicle equipped with all gardening equipment 	<p>Value Propositions</p> <ol style="list-style-type: none"> Gardening service at doorstep Customization of service Economical rates Easy Scheduling with website and mobile app Wide variety of services On-time service Service will be done even if the client is out and proof of work will be updated. Customer service Large selection and fair pricing Quality products <p>Revenue Streams</p> <ol style="list-style-type: none"> Per visit charges Garden maintenance recurring monthly, quarterly or annual charges Service packages Revenue from products sold Chat support and call support charges 	<p>Customer Relationships</p> <ol style="list-style-type: none"> Dedicated personal assistant for clients Communities Precise and elegant work Rewards for references and loyalty Follow-up Transparent and consistent Customer Retention <p>Channels</p> <ol style="list-style-type: none"> Website Mobile application social media On call bookings Print media Office visit 	<p>Customer Segments</p> <ol style="list-style-type: none"> Working professionals Elderly people IT Companies Apartments Building & Civil Engineering Contractors Architects Interior designers Event Managers

Figure 2. Business Model Canvas

VII. IDEA ASSESSMENT SCORECARD

TABLE - V
ASSESSMENT SCORECARD

Element	Question	Low	Medium	High	Reason for the Score
Possible Score		1,2,3	4,5,6	7,8,9	
Product	Is this really a product or process innovation?		5		An incremental improvement over what exists and maintains the

					industry now.
	Can the intellectual property be legally protected?		5		Some legal protection is attainable (narrow scope patents, trademarks, and copyright).
Market	Are customers receptive? Does this solve a problem?		6		The problem is moderately urgent, and currently available competitive products or product substitutes are somewhat effective (cold interest).
Industry	Is the Industry Attractive?		5		Neutral
People	Does the venture's mission fit the personal aspirations of the entrepreneur(s), their willingness to take the to risks and give up control?		6		The mission of the new venture is in line with the entrepreneurs' personal aspirations, but it is inconsistent with their willingness to take risks and give up control.
	Is the entrepreneurial team sufficiently connected up, down and across the value chain?		6		The entrepreneurial team has some personal h or professional ties with customers, suppliers, and competitors.
Money	Are the gross or operating margins satisfactory given the typical industry cost structure?			7	Venture's gross or operating margins are higher than typical for the industry.
	Are operating and cash cycles optimised?		5		The venture has optimised some components of the cash and operating cycles.
	Does the venture's revenue model entail customer repeat sales or recurring revenue?		6		Some limited revenue generated through repeat sales and/or subscriptions.
Total Scores			44	7	51

Scoring 45-54 points indicates that self-employment or owning a small business can be a viable option to earn an income for oneself and a few employees, but it may not have much potential for significant expansion. It is a preferable alternative to unemployment or working at a desk job, but it may not be an effective means of creating wealth for others as it typically only supports a single person or family.

VIII. CHALLENGES AND FUTURE PROSPECTS

Common challenges faced by gardening businesses include seasonal fluctuations in demand, weather-related challenges, competition from larger retailers, and rising costs of materials and labor. To overcome these challenges, businesses can adopt strategies such as offering year-round services, diversifying product offerings, implementing efficient cost-cutting measures, and leveraging digital marketing techniques. Case studies of successful gardening businesses show how companies like Green Acres and Gardener's Supply Company have been able to achieve success through customer-focused service, product innovation, and a commitment to sustainability.

Emerging technologies and trends in the gardening industry include the use of artificial intelligence and automation in gardening equipment, increased adoption of sustainable and eco-friendly practices, and the growth of urban gardening and indoor gardening. These trends present opportunities for growth and expansion in the industry.

Future challenges in the gardening industry may include increasing competition, changes in consumer preferences and behavior, and the impacts of climate change on gardening practices.

To prepare for these challenges, businesses can focus on innovation, sustainability, and diversification of products and services, the gardening industry is poised for growth and innovation as consumers increasingly seek sustainable and eco-friendly solutions for their gardening needs. By staying up to date with emerging trends and technologies, businesses can position themselves for success in this dynamic and evolving industry.

IX. CONCLUSION

The gardening industry plays a vital role in promoting sustainable and eco-friendly practices to protect our environment. As a gardening business, it is important to recognize the challenges faced by the industry and implement strategies to overcome them. By prioritizing the use of eco-friendly materials and practices, promoting sustainability, and embracing emerging technologies, gardening businesses can thrive and grow while minimizing their environmental impact, case studies of successful gardening businesses demonstrate the effectiveness of these strategies in achieving business success and contributing to a healthier planet. It is crucial for businesses to stay informed of future trends and challenges and to prepare for them by adapting to new technologies, expanding their services, and maintaining a commitment to sustainability.

The gardening industry has a significant role to play in creating a more sustainable future for our planet, and with the right approach and strategies in place, businesses in this industry can succeed while promoting environmental stewardship.

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