



## KAPITEL 2 / CHAPTER 2<sup>2</sup>

### SUSTAINABLE DEVELOPMENT OF ENTREPRENEURSHIP IN ECONOMIC TRANSFORMATIONS

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#### Introduction

The current stage of economic development is characterized by intensive transformational processes that impact all areas of entrepreneurial activity. Globalization, digitalization, and changes in society's environmental and social priorities require entrepreneurs to adapt to new conditions by implementing innovative approaches to business management, particularly in the direction of sustainable development. Sustainable business development ensures a transition to long-term economic growth while simultaneously maintaining ecological balance and upholding social responsibility, which has become a popular approach to conducting business activities today.

In their research, Lazorenko T. and Sholom I. showed that sustainability, when systematically managed, can create and maintain opportunities to enhance a enterprise's competitiveness [10]. Daily H. proved that this opportunity is formed despite the impact of challenges associated with the need for investment in cutting-edge technologies, optimization of resource use, and modernization of management systems, etc. [6-7]. In the same context, Horbanyova V. emphasizes that in the conditions of rapid economic transformations, the issue of sustainable development is of utmost importance [3]:

- For small and medium-sized entrepreneurs, for whom it is critically important to achieve stability in operations by maximizing the value of Hicks-Lindahl aggregate income flow;

-For large enterprises, quick economic adaptability in the long term is essential, provided that at least the total capital through which was achieved is preserved.

In this context, we agree with the statements of scholars regarding the significance of studying the features and approaches to sustainable entrepreneurship development

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and the necessity of identifying optimal ways to preserve the functionality and adaptability of entrepreneurs to changes in the dynamic external environment.

Considering the outlined positions, the research initiated by the authors aims to analyze the characteristics that determine the sustainable development of entrepreneurship in the context of external environmental transformations and identify ways to optimize business management from the perspective of its reorientation towards the principles of sustainability and responsibility.

## **2.1. Characteristics of sustainable entrepreneurship development in the context of economic transformations.**

The authors emphasize that sustainable entrepreneurship development in the context of economic transformations is a strategic approach to business management aimed at ensuring stable functioning and rapid adaptability through the controlled maximization of the Hicks-Lindahl aggregate income flow.

Thus, we agree with Grechko A. and Ocheretyana O., statements that this is because the Hicks-Lindahl aggregate income is the main indicator that considers changes in welfare and resource efficiency in the economy based on consumer preferences and expenditures [4].

At the same time, considering that we view economic transformations as processes of significant changes in the economic structure and functioning aimed at adjusting efficiency and adapting to new conditions, needs, and challenges, sustainable entrepreneurship development in such conditions involves transformations that are focused on the continuous optimization of all economic processes.

These processes concern the use of limited resources through their integration with ecological (environmentally, energy, and material-saving) technologies, including [2; 6-7; 11]:

- extraction and processing of raw materials;
- creation of environmentally acceptable products;



- minimization, recycling, and disposal of waste;
- development oriented towards human well-being.

The content of the above statements allows us to outline the characteristics that directly or indirectly define the sustainable development of entrepreneurship.

Thus, the main characteristic of sustainable entrepreneurship development is the maximization of the aggregate income flow, provided that the aggregate capital used to generate this income is at least maintained and ideally— increased [6]. It means that a business must generate profit without depleting or degrading the main types of capital, among which the most commonly highlighted are physical, natural, and human capital.

Some scholars, such as Daly G., Lazorenko T., and Sholom I., highlight the importance of maintaining financial capital. In our opinion, this could make sense, as finances are important for ensuring the sustainable development of an entrepreneur. Therefore, the preservation and growth of the types of capital we have identified are important for ensuring the long-term stability and development of the enterprise, provided there is a balance between financial and other types of capital, so as not to reduce business efficiency through short-term profit maximization.

Within the framework of sustainable development, it is important to determine which types of capital should be preserved and in what proportions, as different types of capital can be either interchangeable or complementary (depending on the specific circumstances and the entrepreneur's strategy). Let's take a closer look at the types of capital that are a priority to preserve [3; 10-11]:

1. Physical capital — this refers to the means of production, infrastructure, machinery, and equipment. Entrepreneurs need to maintain or upgrade this capital to sustain and improve the efficiency of production processes (which is possible through the application of innovative technologies and the improvement of resource efficiency), while ensuring that no harm is done to the environment.

2. Natural capital refers to the resources of nature (land, water, air, minerals, biodiversity) that serve as the foundation for production and sustaining life. It is important not only to preserve natural capital but also to develop ways for its



restoration and sustainable use. In particular, entrepreneurs should aim to minimize the negative impact on the environment by adopting eco-friendly technologies, reducing emissions and waste, and supporting the ecological renewability of resources.

3. Human capital refers to the knowledge, skills, health, and intellectual resources of the people working for the entrepreneur. Entrepreneurs focused on sustainable development should invest in the development of human capital through education, professional training, and improving working conditions. Such investments not only increase labor productivity but also help entrepreneurs adapt to new technological and social challenges.

4. Financial capital refers to money, credit, and other financial assets used for investments in innovation, production modernization, human capital development, as well as ensuring long-term financial stability.

Thus, maximizing the total income flow in sustainable development means that the enterprise must create a stable economic outcome while preserving and developing all types of capital [6-7].

The interchangeability or complementarity of different types of capital becomes a critical factor in determining the sustainable development strategy, as the impact of capital can lead to changes in other aspects of the business and its ability to adapt to change.

The core characteristic of sustainable entrepreneurship is the managed maximization of the total income flow while preserving the total capital through which this income is generated.

Among the accompanying characteristics of sustainable entrepreneurship development are: the valuation of preserved capital, especially environmental resources; promoting the fair distribution of goods within the economy; and supporting the integrity of biological and physical natural systems. These characteristics align with the process of maximizing the total income flow (Hicks-Lindahl criterion) through the optimization of business management activities [8].

It should be noted that the valuation of preserved capital, especially environmental resources, is a characteristic of sustainable entrepreneurship development.



Gerasymchuk Z.V. and Khvesyuk M. point out that this valuation involves calculating the value of the capital used by the entrepreneur to generate income, particularly in the context of natural and production resources [1; 11]. The valuation allows for assessing the economic efficiency of resource use and predicting which of them require restoration or protection to ensure the long-term stability of both the business and the environment. In this context, the two types of sustainability that determine the valuation of capital are as follows:

1. Weak sustainability — this is the concept where natural and production capital may decrease over time. It suggests that certain natural resources can be used (for example, non-renewable resources) if the economic income derived from their use can compensate for the costs of their restoration, by the specifics outlined in Table 1.

**Table 1 - Components of the weak sustainability concept of entrepreneurship.**

Components of weak sustainability	Features of weak sustainability formation	Example of weak sustainability formation
Substitution of natural resources with other types of capital*	Entrepreneurs can use natural resources (especially non-renewable ones, such as oil, gas, minerals) to create investment projects, technologies, or other assets that will generate profit in the future	For instance, oil extraction can be used to create resources for producing alternative energy, such as solar or wind energy, or to develop new materials that reduce the need for fossil resources.
Economic compensation for restoration costs	If the resources used by entrepreneurs are limited and cannot be restored in a short period, weak sustainability assumes that the costs of their extraction and use must be compensated through investments in restoration or the creation of new resources or assets	For example, a portion of the profits from the sale of non-renewable resources can be directed towards research and development of renewable resources, infrastructure projects, or the conservation of ecosystems in other areas.
Flexibility in approaches to managing natural resources	It is important to have a flexible approach to managing natural resources. This means that entrepreneurs must be prepared to adjust their strategies for using natural resources based on market changes, technological advancements, or ecological conditions.	Another example is the importance of flexibility, which allows for the substitution of certain non-renewable natural resources or adjusting their use to conditions of scarcity.

Note

\* In this case, the substitution of natural capital should occur through investments in human capital (scientific and technological development, employee training) or in infrastructure that enhances productivity and reduces dependence on natural resources.

A source: formulated by the author based on [2; 4; 7]

In this context, the valuation of natural resources within the framework of weak



sustainability involves [4; 7]: 1) calculating the cost of substituting natural resources with other types of capital (which should include not only the direct costs of extraction and processing but also potential costs for ecological restoration or environmental impact); 2) calculating the economic compensation for restoration costs.

2. Strong sustainability is a concept in which natural capital should not decrease over time. Natural resource use must be balanced and allow for restoration at a rate that preserves ecosystems and natural environments. [6-7]. It means that businesses exploiting non-renewable resources (such as oil, gas, coal, or minerals) should allocate a portion of their profits and invest in the restoration and conservation of valuable natural resources, such as forests, water resources, soils, or biodiversity, by the specifics outlined in Table 2.

**Table 2 —Components of the strong sustainability concept of entrepreneurship**

Components of strong sustainability	Features of strong sustainability formation	Example of strong sustainability formation
A portion of profits is directed towards the restoration of natural resources	Allocating a portion of profits for investments in the restoration and conservation of non-renewable natural resources, such as forests, water resources, soil, or for the preservation of biodiversity	An entrepreneur engaged in oil extraction might allocate a portion of their profits to forest planting or other conservation efforts, such as restoring lost wetlands or protecting endangered species.
Investments in the conservation of ecosystems and natural habitats	Entrepreneurial responsibility for the preservation of natural ecosystems, which are foundational for many resources, including water, air, soil, and forests	Funding programs for nature conservation and biodiversity preservation. Restoration of degraded lands (e.g., reforestation on cleared areas or reclamation of land after mineral extraction). Implementation of projects for water resource conservation, such as reservoir cleaning or wetland restoration.
Integration of environmental standards into business models	Adopting the strong sustainability concept as part of a development strategy, which includes creating a business model focused on ecological preservation and social sustainability.	Entrepreneurs should implement environmentally friendly technologies that reduce negative impacts on nature, such as using solar or wind energy.. Entrepreneurs should conduct environmental audits to continuously assess and reduce their negative impact on the environment, as well as develop green products or services that align with sustainable development requirements.

*A source: formulated by the author based on [2; 5-7]*



In this context, the valuation of natural resources within the framework of strong sustainability entails [6-7]:

- 1) calculating the value of natural resources based on their renewability and importance to the ecosystem;
- 2) investing in the restoration of natural capital, particularly in environmentally friendly technologies that reduce resource consumption and minimize the enterprise's ecological footprint (at a cost equivalent to the natural capital expended);
- 3) integrating long-term environmental costs into entrepreneurs' financial models to determine the true value of the natural resources used and account for future environmental needs.

This capital valuation of capital is an important tool for determining the path to sustainable entrepreneurship development. It allows for the optimization of natural resource use in business activities and enables entrepreneurs to implement effective mechanisms for their restoration and conservation, ensuring economic benefits while minimizing the negative impact on the environment.

Kaminsky P.D. emphasizes the importance of a fair distribution of benefits in the economy, which adjusts the value of Hicks-Lindahl's aggregate income [8]. According to his views, fairness in the economic context is ensured through access to resources and opportunities for different social groups, which allows each participant in the economic process to achieve their goals and realize their potential.

Thus, the main aspects of forming this characteristic are as follows (Table 3): equal access to resources and opportunities; expanding the options available for human capital; realizing the potential and opportunities of each participant; impact on social and economic mobility.

According to this characteristic, the adjustability of the Hicks-Lindahl aggregate income flow is achievable with a fair distribution of benefits in the economy, namely when there is equal access to resources and opportunities for all population groups.

Herasymchuk Z. V. emphasizes the importance of promoting the integrity of biological and physical natural systems to ensure the adjustability of the Hicks-Lindahl aggregate income flow values [1].





**Table 3 - The main aspects of forming a fair distribution of benefits in the economy as a characteristic of sustainable development**

Components of a fair distribution of benefits	Features of forming a fair distribution of benefits	The impact of a fair distribution of benefits on the value of the Hicks-Lindahl aggregate income flow.
Equal access to resources and opportunities	Ensuring fairness in the economy through accessibility – all social groups should have equal access to essential resources such as land, capital, information, technologies, and other key elements of economic activity	All participants in the process of forming the Hicks-Lindahl income flow should have the opportunity to use the benefits for their own development or to improve their quality of life.
Expanding the options available for human capital	Providing opportunities for individuals to realize their potential through access to education, professional development, healthcare, and other factors that contribute to the development of human capital.	The opportunity for every participant in the economic process, regardless of social or economic status, to acquire the skills and knowledge necessary to generate the Hicks-Lindahl income flow
Realizing the potential and opportunities of each participant	Supporting inclusive policies that enable people from different social groups to realize their opportunities.	Support through the income flow for low-income groups, those facing discrimination, and individuals in economically vulnerable situations
Impact on social and economic mobility	Enhancing social and economic mobility, meaning the ability for individuals to change their social and economic status through their own efforts and abilities.	It allows everyone to contribute to maximizing the value of the Hicks-Lindahl aggregate income flow, ensuring personal development and success, regardless of initial conditions.

Note / \*through the creation of opportunities for education, employment, and social security.

A source: formulated by the author based on [1-2; 5]

This characteristic is focused on the contribution of entrepreneurs to ensuring global biosphere stability through the integration of principles of ecological sustainability into their business activities, aimed at reducing the negative impact on the natural environment and preserving natural systems for future generations.

Thus, the main aspects of forming this characteristic are as follows (Table 4): general support for ecosystems, ensuring global biosphere stability; interaction of biological and physical components of nature.

According to this characteristic, the adjustability of the Hicks-Lindahl aggregate income flow is achievable through the entrepreneur's contribution to the integrity of biological and physical natural systems, specifically when this process becomes the foundation for ensuring the development and stability of the biosphere. It requires the





integration of ecological principles into all areas of economic activity, the preservation of ecosystems, the restoration of damaged natural environments, and the support of biodiversity.

**Table 4 - The main aspects of promoting the integrity of biological and physical natural systems as a characteristic of sustainable development**

Components of promoting natural systems	Features of promoting the integrity of biological and physical natural systems	The impact of promoting the integrity of natural systems on the value of the Hicks-Lindahl aggregate income flow.
General support for ecosystems	Support from the entrepreneur for the health of ecosystems that perform essential functions necessary for the life of humans and all living organisms.	The implementation of measures by the entrepreneur for water and air purification, climate regulation, pollination of plants, biodiversity preservation, and many others.
Ensuring global biosphere stability	Preservation of the biological and physical balance in natural systems.	The entrepreneur's focus on supporting the health of ecosystems, which, in turn, will help maintain the balance between living and non-living components of the Earth.
Interaction of biological and physical components of nature	Considering the interconnections between biological and physical components of nature.	Ensuring the sustainable use of resources, which minimizes disruptions to natural cycles and supports economic productivity through balanced interaction with the environment.
Preservation of existing ecosystems and their restoration after degradation	Restoration of degraded lands, conservation of water resources, reforestation, and preservation of biodiversity, through which the entrepreneur contributes to enhancing ecosystem stability as well as restoring their beneficial functions.	Contributing to economic growth by enhancing the utility of ecosystems for business and society, thereby increasing the value of the Hicks-Lindahl aggregate income flow.
Promoting biodiversity	Creating conditions to support the diversity of living organisms and their habitats.	Increasing the resilience of natural systems through biodiversity preservation, which ensures a stable flow of ecosystem services and sustainable economic income

*A source: formulated by the author based on [1; 6]*



## 2.2. The main ways to optimize business management through the entrepreneur's reorientation towards the principles of sustainability and social responsibility

Within the scope of the outlined study, we emphasize that ways to optimize business management are aimed at reorienting the entrepreneur toward the principles of sustainability and responsibility.

According to the analysis of the works of M. Khvesyk, I. Bystryakov [11], and Herasymchuk Z.V. [1], these pathways encompass various theoretical approaches and practical measures that help adapt the business to the requirements of stability in operation or economic adaptability in the long-term perspective while ensuring the preservation of the total capital through which these goals are achieved.

So, the main ways to optimize business management should create opportunities for shaping and adjusting the process of maximizing the value of the Hicks-Lindahl aggregate income flow through its reorientation towards the principles of sustainability and social responsibility [6-7].

It is advisable to implement this according to the details in Figure 1.

<i>Implementation of environmental standards</i>	<i>Development of the entrepreneur's social responsibility.</i>	<i>Investments in human capital.</i>	<i>Transition to a circular economy.</i>
<i>Focus on long-term planning of the Hicks-Lindahl aggregate income values</i>	Ways to optimize business management (improving the efficiency, productivity, and effectiveness of the enterprise by enhancing management decisions, processes, and resources)	<i>Increasing transparency and engagement with stakeholders.</i>	
	<i>Increasing operational transparency and engagement with stakeholders.</i>		

**Figure 1. The main ways to optimize business management through the entrepreneur's reorientation towards the principles of sustainability and social responsibility**

*A source: formulated by the author based on [1; 6-7; 11]*



Thus, optimizing business management involves the use of methods, tools, and strategies that enable the implementation of [3-4; 11]:

1. The introduction of environmental standards – this is the process of integrating defined norms, requirements, and principles aimed at environmental conservation into the activities of businesses, organizations, and government institutions;

2. The development of the entrepreneur's social responsibility – this is the process through which entrepreneurs integrate social, environmental, and ethical principles into their business strategy, operations, and interactions with all stakeholders.

3. Investments in human capital are the investment of resources in the development and improvement of skills, knowledge, health, and potential of individuals, which contribute to enhancing their productivity and quality of life.

4. The transition to a circular economy is a shift in the economic model aimed at maximizing resource utilization through reuse, restoration, and recycling.

5. Focus on the long-term planning of the Hicks-Lindahl aggregate income values – this principle of analyzing and assessing aggregate income in the economy, based on considering both current outcomes and long-term prospects.

6. Increasing transparency and engagement with stakeholders is the process in which entrepreneurs actively disclose information about their operations, financial performance, and the environmental, social, and ethical aspects of their work to all stakeholders.

7. Innovations and digitalization of the Hicks-Lindahl income maximization process involve the application of cutting-edge technologies and innovative approaches to optimize and maximize aggregate income within the Hicks-Lindahl economic model.

So, ways to optimize business management within the framework of implementing environmental standards involve the use of environmentally friendly technologies and resource-saving production methods (to minimize the negative impact of economic, production, and commercial operations on the environment) through their certification in accordance with international standards.

At the same time, the process of reorienting the entrepreneur towards the



principles of sustainability and social responsibility includes (Table 5): the use of environmentally friendly technologies; resource-saving production methods; certification according to international environmental standards; utilizing the benefits of implementing environmental standards.

The development of social responsibility of the entrepreneur is an important component of modern business, which takes into account the economic, social, and environmental interests of society.

At the same time, reorienting the entrepreneur to the principles of sustainability and social responsibility includes (Table 6): supporting local communities; transparency and integrity in decision-making and fulfilling commitments; adhering to ethical standards.

**Table 5 - Ways to optimize business management within the framework of implementing environmental standards**

Components of the process of reorienting the entrepreneur towards the principles of sustainability and social responsibility	The content of reorienting the entrepreneur towards the principles of sustainability and social responsibility	General practices for optimizing the management of business activities for entrepreneurs
Use of environmentally friendly technologies	Implementation of cutting-edge technologies that reduce the negative impact on the environment	Waste recycling technologies Energy efficiency Environmentally friendly production
Resource-saving production methods	Replacing traditional resource-intensive methods with more efficient and resource-saving ones.	Reduction of water consumption Raw material substitution Reduction of emissions and noise
Certification according to international environmental standards	Certification that confirms the entrepreneur's compliance with international standards.	Implementation of ISO 14001 Certification of economic, production, and commercial operations under ISO 14001
Leveraging the benefits of implementing environmental standards	Utilizing the opportunities that arise from adhering to environmental standards.	Reduction of operational costs Improvement of the entrepreneur's image Increase in competitiveness

*A source: formulated by the author based on [1; 3-4; 11]*



Thus, socially responsible activities contribute to a positive image of the entrepreneur, enhance trust from consumers and partners, and create sustainable competitive advantages.

Investments in human capital are one of the core factors for the sustainable development of any organization and the economy as a whole.

These investments contribute to increased productivity, innovation, employee satisfaction, and enhanced competitiveness in the market [8].

In this context, it is important to focus on three main aspects (Table 7): supporting employees' professional development; improving working conditions; creating an inclusive work environment.

**Table 6 — Ways to develop entrepreneurial social responsibility**

Components of the process of reorienting an entrepreneur	The essence of the entrepreneur's reorientation towards the principles of sustainability and social responsibility	General practices for the development of social responsibility
Support for local communities	Interaction with local communities and support for their social, cultural, and educational projects helps to establish strong connections between the business and society/	It may include financial or material assistance to educational institutions, support for local charitable initiatives, or participation in volunteer programs.
Transparency	Transparency in business operations involves openness in relationships with stakeholders, including shareholders, customers, suppliers, employees, and local communities.	This includes providing complete, accurate, and accessible information about the entrepreneur's activities, which strengthens trust in it.
Integrity	Integrity involves honesty and accountability in decision-making and fulfilling commitments, including fair wages, adherence to labor laws, and creating comfortable working conditions.	Providing decent working conditions and respecting employees' rights enhances their loyalty and productivity, which positively impacts the entrepreneur's success in the long term.
Adherence to ethical standards	Ethical standards define the values and principles that guide a entrepreneur's operations, particularly its approach to partners, customers, competitors, and employees.	This includes compliance with legislation, combating corruption, ethical marketing, and rejecting discrimination.

*A source: formulated by the author based on [1; 8; 11]*

Investments in human capital contribute to the personal and professional development of employees and enhance the efficiency of companies and public



institutions [8]. In the long term, such initiatives reduce employee turnover, increase productivity, improve the employer's reputation, and stimulate economic growth at the national level.

The transition to a circular economy is a concept that contrasts with the traditional linear economy ("take – make – dispose") and aims at creating closed-loop resource usage cycles.

**Table 7 — Ways of directing investments in human capital**

Components of the process of reorienting entrepreneurs	The essence of reorienting entrepreneurs towards the principles of sustainability and social responsibility	General practices of investment in human capital
Supporting employees' professional development	Supporting continuous learning and development of competencies that align with the needs of the modern labor market and foster adaptability to changes.	Organizing training, qualification enhancement courses, and professional development programs. Implementing mentoring and coaching programs. Creating individual development and career growth plans for employees.
Improving working conditions	Providing physically and psychologically safe working conditions, as well as supporting work-life balance.	Introducing health insurance programs and employee wellness support. Improving working conditions, such as modern equipment and ergonomics of workspaces. Offering flexible work schedules, remote work options, and additional days off.
Inclusive work environment	Promoting gender equality, respect for human rights, avoiding discrimination, and creating equal opportunities for all employees.	Implementing inclusion and anti-discrimination policies. Supporting cultural diversity within teams. Organizing training on inclusion, gender equality, and human rights.

*A source: formulated by the author based on [2-4; 10-11]*

In this context, it is important to focus on three main aspects (Table 8): reuse; material recycling; closed loops for products and materials; renting and sharing. The transition of an entrepreneur to a circular economy is not only beneficial but essential for sustainable development, as it supports initiatives for resource conservation and environmental protection.

**Table 8 — Paths to the transition to a circular economy**

Components of the process of reorienting an entrepreneur	The content of the entrepreneur's reorientation towards sustainability and social responsibility principles	General practices of investing in human capital
Resource reuse	Extending the lifespan of products through repair, modifications, or reuse	Reuse of packaging, equipment, furniture, and other goods, which reduces the demand for new resources
Material recycling	Instead of sending waste to landfills, materials are recycled and become raw materials for the production of new products.	Recycling of plastics, metals, paper, and textiles.
Waste reduction	Reducing the volume of waste at all stages of the production cycle – from product design to its disposal.	Creating products that are easier to recycle or decompose, as well as improving production processes to minimize waste.
Closed loops for products and materials	Designing products that are intended for closed-loop resource use from the very beginning.	Modular smartphones or furniture that can be easily disassembled for component reuse.
Renting and sharing	The shared consumption economy model.	Products are not purchased but are rented or shared among multiple users.

*A source: formulated by the author based on [2; 7; 9]*

The entrepreneur's focus on long-term planning for Hicks-Lindahl aggregate income values takes into account sustainable growth and a balance among economic, social, and environmental interests. In this regard, the process of reorienting the entrepreneur toward sustainability and social responsibility principles includes (Table 9): sustainable innovations and long-term investments; prioritizing stable growth over short-term profits; adapting to market and environmental challenges.

Thus, income planning according to Hicks-Lindahl in modern conditions becomes an important tool for achieving sustainable growth, where economic benefits are integrated with environmental care and social needs. This approach helps reduce risks associated with short-term decisions and lays the foundation for a strong and resilient economy in the long term.

Increasing transparency and actively engaging stakeholders are key aspects of a modern socially responsible and sustainable business strategy.





**Table 9 — Ways to ensure a focus on long-term planning of hicks-lindahl aggregate income values**

Components of the process of reorienting an entrepreneur	The essence of the entrepreneur's shift towards the principles of sustainability and social responsibility	General practices for long-term planning of the Hicks-Lindahl aggregate income values
Sustainable innovations and long-term investments	The implementation of cutting-edge technologies and solutions that help reduce the negative impact on the environment, optimize resource usage, and improve production efficiency.	Renewable energy sources, eco-friendly production technologies, and the circular economy (where products are recycled and reused).
Prioritization of stable growth over short-term profits	The abandonment of excessive resource use that depletes ecological capital, requiring companies to shift towards models where revenues grow gradually, but over a long period	Income should not only account for current revenues but also the ability of the economic system to sustain these revenues in the future.
Adaptation to market and environmental challenges	The implementation of ESG (Environmental, Social, and Governance) practices, which allows for the consideration of these aspects in management and planning	Enhancing the resilience of entrepreneurs to external risks, enabling them to better respond to environmental changes and legislative requirements, while ensuring long-term socio-economic benefits.

*A source: formulated by the author based on [2; 7; 9-10]*

This approach involves open communication, considering the interests of partners, employees, and the public, which helps build trust, improve decision-making efficiency, and strengthen corporate reputation.

The process of reorienting the entrepreneur towards the principles of sustainability and social responsibility includes (Table 1.10): expanding open communication; involving stakeholders in the decision-making process; developing partnerships; stimulating an internal culture of responsibility.

These optimization strategies allow entrepreneurs to focus on long-term values and adapt to new socio-environmental challenges, ensuring stability and a positive impact on society and the environment.

The focus on innovation and the digitalization of the Hicks-Lindahl income maximization process play a key role in modern automation, monitoring, and optimization processes, helping to reduce the negative impact on the environment and improve operational efficiency. At the same time, the process of reorienting the



entrepreneur towards the principles of sustainability and social responsibility includes (Table 1.11) [9; 11]: automation of processes; monitoring of environmental indicators; resource optimization; digital twins.

**Table 1.10 — Ways to increase transparency and stakeholder engagement**

Components of the process of reorienting an entrepreneur	The essence of the entrepreneur's shift towards the principles of sustainability and social responsibility	Common practices for increased transparency and active stakeholder engagement
Expanding open communication	Providing access to information about the activities of the entrepreneur, transparency in indicators and environmental initiatives helps to build trust on the part of stakeholders.	Publication of financial reports, regular information about income, costs and allocation of resources create conditions for assessing the stability of the company.
Involvement in the decision-making process	Involving partners, employees and the public in discussing strategic decisions, including their opinions and assessing the impact on society and the environment.	Consultations with partners. Internal interaction with employees. Community involvement. Consideration of environmental aspects.
Development of partnerships	Cooperation with state, public and international organizations.	Exchange of experience, access to new knowledge and resources, as well as the formation of joint decisions for the benefit of society.
Stimulating an internal culture of responsibility.	Forming employees' understanding of the importance of their contribution to the sustainable development of the company and increasing their participation in decision-making.	Increasing awareness of mission and values. Involving employees in the decision-making process. Developing leadership and supporting teamwork.

*A source: formulated by the author based on [2; 8-9]*

These strategies enable the entrepreneur to maintain the creation of more sustainable and efficient operational models, helping to reduce the environmental footprint and improve business economic performance. This allows the creation of a foundation for measuring changes in welfare depending on the state of production conditions or external factors (such as environmental or social changes).



**Table 1.11— Ways to implement innovation and digitalization in the Hicks-Lindahl income maximization process.**

Components of the process of reorienting an entrepreneur	The content of the entrepreneur's reorientation towards the principles of sustainability and social responsibility	General practices for implementing innovation and digitalization
Process automation	The use of sensors, detectors, and software	Automating many operational processes, reducing the need for human labor and minimizing errors.
Monitoring of environmental indicators	Digital platforms enable continuous monitoring of the environmental condition, including the level of pollutant emissions, and the quality of water, air, and soil.	Real-time data collection, enabling quick responses to changes and optimizing the environmental impact.
Resource optimization	The use of artificial intelligence algorithms and big data	Forecasting resource needs, such as energy consumption or water usage, and adapting processes accordingly.
Environmental digital platforms	The development of environmental digital platforms promotes more sustainable development and enhances transparency in environmental reporting.	Integrating environmental data with other business processes.
Digital twins	Digital twin technology allows the creation of accurate virtual copies of physical objects or processes for simulating and analyzing their impact on the environment.	Testing various optimization strategies before their implementation in real life, reducing risks and losses.

*A source: formulated by the author based on [2-3; 9; 11]*

## Summary and conclusions.

The research findings indicate that sustainable entrepreneurship in the context of economic transformations is a strategic approach aimed at ensuring the stable functioning of businesses and their ability to adapt. In this context, the following conclusions can be made:

1. Maximizing the Hicks-Lindahl aggregate income flow is a core factor in sustainable development, as this indicator reflects changes in welfare and the efficiency of resource use in the economy, taking into account consumer preferences and cost.
2. The main characteristic of sustainable entrepreneurship is the aggregate income



flow maximization while preserving the total capital, including ecological resources, that support this income. Other important characteristics include the monetary evaluation of preserved capital, promoting the fair distribution of wealth in the economy, and the conservation of biological and physical natural systems/

3. The main ways to optimize the management of business activities include the implementation of environmental standards, the development of entrepreneurial social responsibility, investments in human capital, the transition to a circular economy, a focus on the long-term planning of Hicks-Lindahl aggregate income values, increased transparency and interaction with stakeholders, as well as innovation and digitalization in the Hicks-Lindahl income maximization process.