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Futures Studies on the Regional Economic Development of Iran's Oceanic Coasts

Abstract: - Regional development planning can be considered as a comprehensive approach to reduce regional inequalities. In recent decades, regional economic development planning has gained increased attention as a means to narrow the gap between regions. Given the importance of economic development in regions, particularly strategic coastal areas, and the necessity of utilizing futures studies to effectively manage and guide regional economic development planning, this study employs futures studies methodology to propose strategies for the regional economic development of Iran's oceanic coasts.

This study builds upon previous research titled "Identifying Key Drivers of Regional Economic Development of Iran's Oceanic Coasts." Initially, 54 important variables were identified through a literature review, and with the application of the MIC MAC foresight technique and input from 30 experts in the field, 8 key drivers were recognized. These drivers include: government macro-policies, social welfare and security, tourism and ecotourism, trade and commerce, regional transportation network, job creation, income levels, and inflation. Subsequently, this study employed foresight and scenario planning, using the Scenario Wizard method, to explore potential future scenarios for these identified drivers and to propose scenarios for the regional economic development of Iran's oceanic coasts. Similar to the previous research, the expertise of 30 specialists in the relevant field was utilized to weight the indices used in the study.

The scenarios presented in this study are categorized into three types: strong, plausible, and weak. The current research focuses on analyzing the plausible scenarios, which have the highest compatibility with the conditions of the studied region. In this study, 14 plausible scenarios are identified and grouped into two categories: "Spring" scenarios and "Autumn" scenarios. Among the "Spring" scenarios, scenarios 1 and 3 are considered to have better conditions compared to the others. The "Autumn" scenarios are regarded as undesirable scenarios with critical conditions. In this research, scenarios 13, 11, 12, and 14 are classified under the "Autumn" group.

Keywords: Regional Development, Oceanic Coasts, Foresight, Scenario Planning

I. INTRODUCTION

One of the key concerns for regional planners is the reduction of inequalities and the enhancement of regional development in the future. Therefore, development is a common issue that countries face during the process of economic growth (Juan & Yong, 2019: 41). In fact, the economic aspect of development is the starting point for a general approach to the concept (UN, 2013: 1). Some view economic development as an ongoing process of technological innovation, industrial advancement, and structural transformation (Manuel et al., 2014:63), where these innovations in science and technology lead to a significant multiplier effect on economic development (Cheng & Bei, 2019: 883). Additionally, according to urban and social theorists, the dimensions of development are linked to regional systems (Bellu, 2011: 8), which have become more complex and diverse in the era of globalization, gaining more importance than ever before (Ye et al., 2018: 20).

Given the dynamic nature of regions and the surrounding world, along with the increasing adoption of justice-oriented approaches, development has gradually become a focal point in the agendas of planners and development programs (Soares and Quintella, 2008: 105). However, the lack of adequate infrastructure and national and global

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challenges sometimes lead to a shortage of economic opportunities and investment resources for regional capabilities (Khanin et al., 2021: 710). Additionally, due to the unavailability of consistent income data at the regional level in developing countries, creating reliable and consistent estimates of economic inequality at a disaggregated level is challenging (Singhal et al., 2020: 1). Consequently, regional inequality manifests as a pervasive phenomenon, creating noticeable gaps in development levels between regions (Apostolache, 2014: 36). In recent years, many governments and policymakers have been striving to reduce the severity of regional inequalities (Winkler, 2012: 84). Currently, this issue remains one of the main challenges in regional policies and development in developing countries (Labidi, 2019: 583). Therefore, today, regional development planning can be seen as a general strategy for reducing regional inequalities (Pessoa Economia, 2008: 57).

Analysis of regional development traditionally focuses on the economic pathways of regions and is gradually expanding (Eversole, 2017: 316). In fact, the specific goals, tools, and methods of regional development are influenced by its broader economic philosophy (Kocziszky, 2009: 5). When economic development occurs at the regional level, it leads to both qualitative and quantitative changes in the region (Camagni, 2005: 32). Therefore, monitoring economic activities is crucial for understanding the level of regional economic development and policymaking (Chen et al., 2020: 1). Consequently, regional development programs are often based on economic plans (Martins et al., 2017: 16).

One of the best methods for accessing regional development programs is to outline scenarios and visions that help planners envision possible futures. Future studies is an interdisciplinary field that employs a wide range of disciplines (Komp-Leukkunen, 2020: 1) and involves systematic thinking about the future and decision-making in the present. Essentially, it searches for appropriate responses to challenges through various approaches and methods at each stage (Monda, 2018: 80). Modern future studies methods, particularly scenario planning, are useful for addressing national and regional issues due to their flexible strategies (Nematpour, 2020: 2). Therefore, they are used to eliminate or reduce challenges at national and regional levels. Scenarios in future studies can present planners with potential visions of the future (Monda, 2018: 80).

Coastal areas are among the most dynamic regions, playing a significant role in the development of knowledge, trade, culture, and more. Currently, a large portion of the population in many countries is active in coastal regions. Coastal functions are diverse, encompassing both natural and human aspects. However, in today's world, the economic functions of coastal areas are particularly prominent. Even landlocked countries dream of accessing coastal areas to benefit from the numerous advantages these regions offer. Therefore, having an economic development plan for coastal regions is one of the most important strategic programs for any country.

On the other hand, predicting the future has always been a fascinating and significant topic, pursued through various approaches over time. Given that the world we live in is dynamic, there must be awareness of this dynamism, and appropriate actions should be taken to create a desirable future. Typically, different countries focus on economic development in coastal areas by implementing special economic development programs. They establish specific plans and policies to make appropriate use of these regions. In light of this, the oceanic coasts of Iran possess significant potential for regional economic development, yet these potentials are not fully utilized as they should be. Therefore, this research aims to use key drivers of regional economic development in the oceanic coasts of Iran to develop and present optimal scenarios in this context.

Theoretical Foundations

Regional Development

The theory of regional development pertains to the future of regions and revolves around a simple yet compelling question: Why are some regions poor while others are affluent? Understanding what drives regional prosperity can indicate what less advantaged areas must do to succeed in the future. The theory of regional development addresses the future of regions by focusing on two key concepts: region and development (Eversole, 2017: 305).

Regional development planning refers to the process of strategizing for a region to achieve relative superiority at both national and global levels (Parizadi et al., 2012: 2). The term "regional future" is now associated with networks, centers, institutions, conferences, meetings, projects, and policies. It seems that the concept of a regional future addresses a need, thus it can focus on solutions to address specific problems (Hefferan, 2017: 295). Strong regional leadership, strategic understanding of regional characteristics, and the flow of knowledge both within

and outside the region can enable areas to build sustainable economic advantages from the outset. Regions facing ideas, structures of disempowerment, and grappling with the consequences of ignorance about development lack the necessary maneuverability to shape their desired future (Eversole, 2017: 316-317).

One of the spatial realities of development is the uneven distribution and dispersion of its benefits across the geographical areas of countries, which reflects the inherently centralizing nature of development (Falselyman & Hajipour, 2014: 91). Developing countries face significant challenges in equitably and effectively distributing their limited resources across different regions. In fact, large urban areas in developing countries are rapidly becoming hubs of economic activity, while peripheral regions remain underdeveloped, leading to increasing regional disparities (Pokharel, 2021: 1). The rapid and unprecedented technological changes, coupled with the intensification of global production and innovation networks and value chains, have highlighted the need to consider regional growth and development. Despite significant advances made by academic research in international trade and economic geography in identifying the transnational aspects of these structural changes, revisiting the regional development perspective still faces challenges, particularly in terms of policy design (Lammarino, 2018: 2).

Foresight

Foresight involves describing potential future scenarios to enable stakeholders to prepare for these possibilities and shape outcomes in the desired direction. In this regard, foresight is a strategic input. Thus, foresight is central to strategic management (Durand, 2006: 130). Additionally, regional foresight, or future-oriented planning, aids in regional strategies by providing a systematic method for selecting appropriate tools for analyzing and implementing strategic and action-oriented strategies in collaboration with involved stakeholders. Through foresight processes, it is possible to explore common grounds for free thinking about potential futures, which strategic approaches can foster. Strategies may be developed to improve or achieve a desirable future, or actions may be taken to prevent potentially undesirable futures. Ideally, this process can help individuals find appropriate solutions for today's complex problems and possibly future ones. Therefore, an important perspective is the goal of creating regional capacities and the ability to engage in strategic planning and collective actions (Higdem, 2014: 42-43).

Foresight focuses on a broad spectrum of issues that have critical strategic implications. These may include demographic changes, significantly extended human lifespans, shifts in economic and military balance among multinational entities, depletion of natural resources, alternative energy sources, emerging technologies, artificial intelligence, biotechnology, and problems arising from inadequate infrastructure, including transportation systems (Curtis, 2010: 77-78). Despite widespread interest in exploring and predicting futures on organizational to planetary scales, there is considerable focus on regional futures. One reason for this is that regions are seen as an intermediate level within a hierarchical scale. A region is a more practical, specific, and tangible level compared to the global and national scales, and it is more comprehensive and continuous than the local level (Hefferan, 2017: 296).

Scientific research, foresight, and regional forecasting are broad terms, and various contributions highlight their connections. The focus on how to engage in research and regional or sub-regional planning is guided by regional foresight processes, which are managed by regional decision-making bodies (Higdem, 2014: 41).

Background of the Research

Eversole (2017), in an article titled "Economics and Its Connection to People: Regional Foresight through Contemporary Regional Development Theory," concluded that regional development theory aims to understand the reasons behind regional prosperity and underdevelopment and how less developed regions can improve. These theories in the field of regional economics are based on the analysis of dynamic regional economic conditions. The research demonstrates that contemporary regional development theory provides disciplinary insights into social processes such as collaboration, innovation, and regional economic competition.

Scientific research and regional foresight and prediction in several fields are broad terms that demonstrate the connections between various contributions. The focus on how action research and regional and sub-regional planning can be addressed is facilitated by regional foresight processes, which are directed by regional decision-making bodies (Higdem, 2014: 41).

Roney (2010) has enabled futurist strategists to make better use of planning models by clarifying critical issues such as changes in economic, industrial, and market structures. On the other hand, a structural strategic planning model provides a framework for integrating and organizing many of the methods and techniques used by futurists. Thus, futures studies and strategic planning complement each other.

Azami (2016) discusses the importance of seas and open waters in two main aspects: the power-enhancing elements of the sea, which include economic, commercial, logistical, military, and geopolitical advantages. Additionally, the functions of naval power include the enhancement of geopolitical status and national power, the preservation of territorial integrity, the security of coastal and maritime borders, and maritime diplomacy.

Hafeznia (2005) highlights Iran's strategic role in various sectors, particularly the role of the Oman coast in energy and goods transportation projects, as well as railway lines. He suggests that Iran can organize regional and international institutions to link the interests of other countries with the Oman coast, thereby enhancing its geopolitical stature in the region and the world. Additionally, by fostering regional and global consensus, Iran can create new opportunities to ensure its national security.

Behdani (2020) argues that in today's world, it is supply chains that compete with each other, not just individual ports. Therefore, alongside port efficiency, the focus of port management is shifting towards accessing more information about inland areas and actively engaging in innovative logistics. The goal of such efforts often involves shifting container transportation from roadways to freight transportation networks.

Kaviani (2017) analyzed the geopolitical position of southeastern Iran and its impact on national strategy, highlighting the current inefficiencies in this region regarding the national division of labor. The study indicates that due to weak regional development infrastructure, this area has not yet created opportunities for regional integration in Iran. Similarly, Ahmadi (2016) in his research on the Indian Ocean and the necessity of coastal development concluded that Iran currently faces significant challenges in maritime activities, with the Makran coast identified as a strategic route for the country's development and global and regional trade exchanges.

Based on the studies conducted in this area, the strengths and weaknesses of Iran's oceanic coasts are clearly evident. Therefore, this research aims to propose and present credible scenarios to address the existing shortcomings.

II. RESEARCH METHODOLOGY

In the first step, within the article titled "Identifying Key Drivers in the Regional Economic Development of Iran's Oceanic Coasts," the key drivers were identified and extracted using the MICMAC method. The MICMAC method, for establishing the foundational system, employed information gathering through brainstorming sessions, or in other words, interviews with experts and document analysis in this field. In these types of methods, the knowledge and expertise of the experts take precedence over their quantity. However, in scenario planning studies, the number of experts generally should not be fewer than 25 (Godet et al., 2008: 74).

Then, continuing from the previous research process and after identifying the key drivers, the next step involves proposing scenarios related to the regional economic development of Iran's oceanic coasts, aligned with the identified drivers. Therefore, in this research, the Scenario Wizard software is utilized to develop and outline the proposed scenarios accordingly.

Scenarios are powerful tools that shape our perceptions of alternative futures—futures that our decisions today can significantly influence (Charles, 2004: 30). Scenarios can offer multiple perspectives on complex events and provide different meanings to these events. As mentioned earlier, due to the high degree of uncertainty in various societal trends, futurists focus on exploring alternative futures rather than predicting a single outcome. In scenario planning, the development of multiple alternative scenarios is crucial. Since the future can no longer be predicted by simply extrapolating past trends, futurists have turned to multi-scenario analysis methods (Kosow, 2008: 13).

The steps for working with the Scenario Wizard software are as follows:

Step 1: In this step, an expert panel is formed. Typically, this panel consists of 12 to 20 members in future studies projects.

Step 2: After inviting individuals to participate in the panel, the panel members are asked to identify the most important key factors related to the issue under study. Generally, 10 to 20 key factors are identified in each future studies project.

Step 3: After identifying the key factors, the panel members are asked to specify the possible states for each key factor using verbal descriptions.

Step 4: The panel members are then asked to describe the impact of the occurrence of state X of key factor X on the possible states of key factor Y in verbal terms. This impact can range from very high to very low on a spectrum.

Step 5: Finally, the known impacts from the previous stage are placed on a numerical scale from +3 to -3 and entered into a matrix. This matrix is provided to the software, and the outputs of the software are analyzed (Mousavi & Kahaki, 2017: 192).

In this study, the potential future states of key drivers were prepared for scenario development based on expert opinions. According to the determined future states for the coastal regions of Iran, 32 different states for 8 key factors were designed, encompassing a range from highly favorable to unfavorable conditions. Subsequently, with the design of these states and the creation of a 32x32 matrix, a questionnaire was prepared and provided to the experts. In the next step, by taking the mode of the expert opinions, the data were prepared for input into the Scenario Wizard software. Throughout all stages of this research, the opinions of 30 experts in the field of regional development studies were utilized. Additionally, the target population was selected purposefully to achieve more accurate results.

Findings of the Study

To identify the factors affecting the regional economic development of Iran's oceanic coasts, relevant articles on regional economic development were reviewed and analyzed using a library research method. This led to the identification of impactful indicators across economic, socio-cultural, environmental, spatial, and managerial dimensions. From these, a panel of experts selected 54 indicators. Using the MicMac software, 8 key drivers were chosen from these 54 indicators across the five domains of economic, socio-cultural, environmental, spatial, and managerial factors, as crucial for influencing the future trends of the system (Ahmadi et al., 2024: 282-269) (Tables 1 and 2) (Figures 1 and 2).

Table 1: Research indicators

Factors		Dimension
X2. Employment generation (local and non-local)	X1. Income Level of People	Economic
X4. Investment levels	X3. Poverty	
X6 .Transit	X5. Competition in regional economic markets	
X8. Commerce and trade	X7. Logistics locations	
X10. Formation of a combined transport committee	X9، Regional cooperation	
X12. Maritime industries	X11. Coastal economy	
X14. Sanctions	X13. Tourism and ecotourism	
X16. Job opportunity diversity	X15. Inflation	
X18، Entrepreneurship	X17. Aquaculture	
X19. Corruption and smuggling of goods		
X21. Literacy level	X20. Empowerment of local people	Socio-Cultural
X23. Spatial distribution of population balance	X22. Social welfare and security	
X25. Migration rate	X24. Quality of service delivery (educational, recreational, and medical)	
X27. Identity formation and social belonging	X26. Exchange and promotion of local culture	
X29. Tourist acceptance culture	X28. Sense of responsibility and social discipline	
X31. Interactive and hospitality culture	X30. University development	

X33. Environmental capacities	X.32 Spatial and locational assets	Environmental
X35. Access to natural and environmental potentials	X34. Infrastructure design compatible with nature	
X37. Use of renewable energy	X36. Environmental regulations	
X38. Climate		
X40. Zoning plans	X39. Land management	Spatial
X42. Docks	X41. Infrastructure facilities	
X44. Free trade zones	X43. Representation level of multinational companies	
X46. Spatial suitability	X45. Regional transportation network	
X48. Security	X47. Social capital	Managerial
X50. Organizational coordination	X49. National government policies	
X52. Trust and cooperation of social actors	X51. Integrated coastal zone management	
X54. Incentive policies	X53. Technical and scientific capabilities	

In the MicMac software, two types of graphs and analyses are generated: one showing direct impacts and the other showing indirect impacts. The following sections will present the graphs for direct impacts and indirect impacts.

The distribution and dispersion of variables on the scatter plot indicate the stability or instability of the system. In stable systems, the dispersion of variables is represented in an **L** shape. This means that some variables have high influence, while others have high sensitivity. In stable systems, a total of three categories of variables can be observed:

a: Highly influential variables on the system (key factors), b: Independent variables, c: System output variables (outcome variables).

However, in unstable systems, the situation is more complex than in stable systems. In these systems, variables are scattered around the diagonal axis of the scatter plot, and they often exhibit an intermediate state of influence and sensitivity. In the analysis of the scatter plot of variables, the following categories of variables can be identified:

a: Determinant or influencing variables, b: Bidirectional variables (risk variables and target variables), c: Sensitive or outcome variables, d: Independent variables (independent of the outcome or independent of the system), e: Regulatory variables (Mousavi & Khaki, 2017: 153-151).

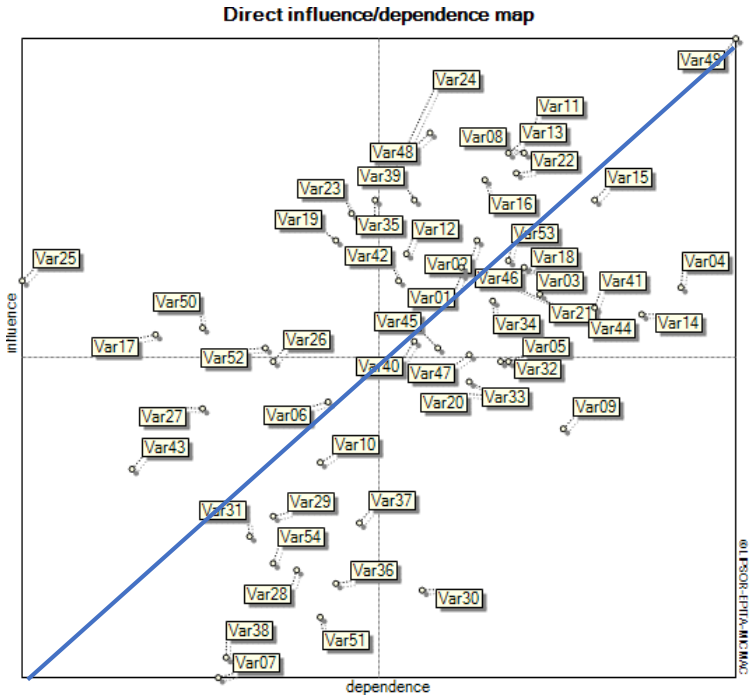

Figure 1: Distribution of Variables Based on Direct Impacts on the Influence-Dependency Axis

Source: (Hosseini et al., 2023: 29)

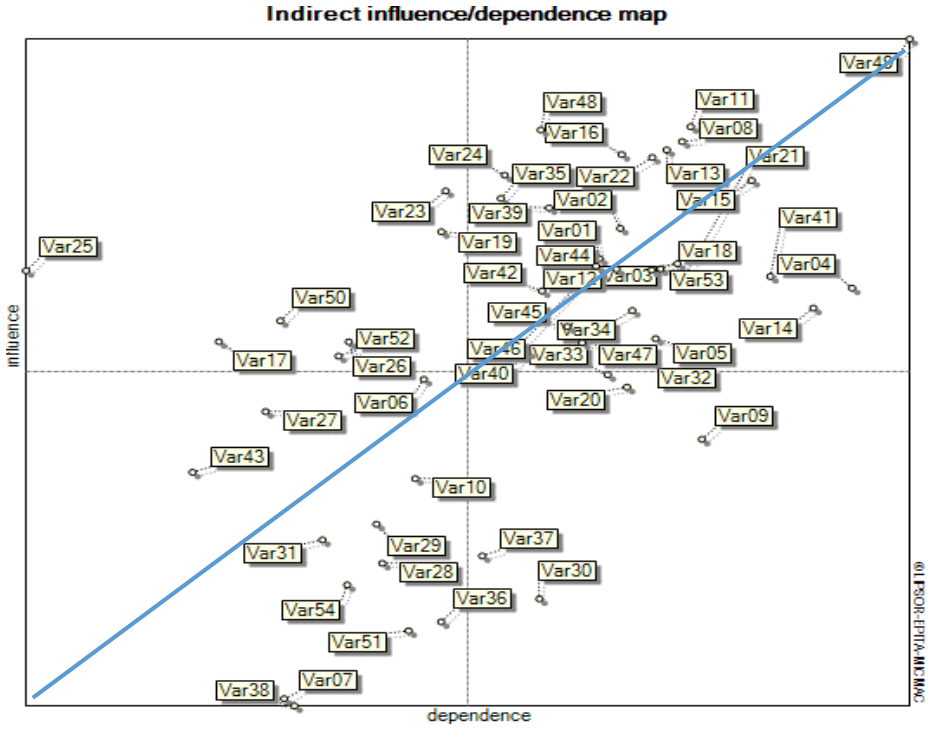

Figure 2: Distribution of Variables Based on Indirect Impacts on the Influence-Dependency Axis

(Ibid., 31)

By comparing the results of the direct and indirect effects analysis, we observe that there is minimal displacement of variables. In fact, the variables are repeated in the indirect scatter plot with very little movement. Once the system has been evaluated and its instability identified, the direct and indirect effects of the variables are ranked in order of their impact, leading to the extraction of the key drivers.

It is worth noting that the key drivers are the variables that lie above the diagonal line in the northeastern region of the system. These variables, referred to as "risk variables," have a high potential to become the main and pivotal actors within the system. Table 2 presents the key drivers influencing the regional economic development of Iran's oceanic coasts.

Table 2: Key Drivers Influencing the Regional Economic Development of Iran's Oceanic Coasts

Row	List of Key Factors	Symbol
1	Government macro policies	X49
2	Welfare and social security	X22
3	Tourism and ecotourism	X13
4	Trade and commerce	X8
5	Regional transportation network	X45
6	Employment generation	X2
7	People's income levels	X1
8	Inflation	X15

(Source: Ibid, 32)

Structure of the Interaction Matrix:

After extracting the key drivers, the next stage, which involves scenario planning, becomes applicable. According to this method, a matrix of probabilities is formed, which is then analyzed using the Scenario Wizard software. This model is a powerful planning tool, as it allows for testing alternative choices not only in terms of desirable development but also regarding the impacts (both positive and negative) of related issues. Therefore, this model provides a novel structure for analysis to support decision-making (Mousavi and Kehki, 2017: 190). After compiling a list of the most important factors and key drivers affecting regional economic development of the oceanic coasts of Iran, the potential states of these factors can be envisioned. In fact, these drivers serve as strategies to guide planners and decision-makers.

Potential States of Key Factors

As observed, eight key factors related to the regional economic development of the oceanic coasts of Iran have been identified. Various potential states for these key factors can be envisioned, and these states are of significant importance in the future planning of the oceanic coasts of Iran. Based on the potential future states for the oceanic coasts of Iran, a total of 32 different states have been designed for the 8 key factors, covering a range from favorable to unfavorable conditions (Table 3).

Table 3: Potential States of Key Factors

Abbreviation	Color Range	Desirability Level	Key Factors	Potential States
A	Dark Green	Completely Desirable	Government Macro Policies (X49)	Maritime approach aligned with land use and regional balance.
	Light Green	Relatively Desirable		Relative improvement of current conditions.
	Yellow	On the Verge of Crisis		Continuation of current conditions.
	Red	Undesirable		Lack of spatial planning policies aligned with regional capabilities.

B	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	Social Welfare and Security (X22)	Increase in community well-being, efficiency and benefit. Relative improvement of current conditions. Continuation of current conditions. Decrease in quality and quantity of community needs fulfillment.
C	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	Tourism and Ecotourism (X13)	Attraction of tourists to leverage natural, social and cultural potentials. Increase in ecotourism and promotion of affordable domestic tourism. Continuation of current conditions. Lack of adequate programs to promote the region and attract tourists.
D	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	Trade and Commerce (X8)	Access to global markets and use of maritime transport and transit. Improvement and increased access to regional markets. Continuation of current conditions. Lack of a comprehensive plan for joining global markets and reduced productivity in utilizing available opportunities.
E	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	Regional Transport Network X45	Connecting ports and creating regional port hubs using combined transport in key international corridors. Relative improvement of the current situation. Continuation of the current situation. Lack of integrated management in the transport sector and absence of appropriate plans for combined transport.
F	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	job Creation X2	Job creation for active, skilled and young workers. Job creation for the existing workforce in the region. Continuation of the current situation. Numerous shortcomings in job creation and increasing unemployment rate.
G	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	Income Level X1	Increase in income and foreign exchange through trade and maritime transport. Supporting active workforce for entrepreneurship according to existing conditions. Continuation of the current situation. Decrease in income due to neglect of existing potentials and opportunities.

H	Dark Green Light Green Yellow Red	Completely Desirable Relatively Desirable On the Verge of Crisis Undesirable	Inflation X15	Increase investment attraction and becoming an investment hub. Relative improvement of the current situation. Continuation of the current situation. Increase in inflation rate and instability of existing prices.

To conduct scenario writing using the Scenario Wizard software, the first step involves inputting the key factors and their various potential states into the software. Then, by designing these scenarios and preparing a 32x32 matrix as in the previous stage, a questionnaire was prepared and distributed to experts. The experts were asked the question: "If any of the potential states of the key factors occur, how much will they affect the likelihood of other states of the other factors occurring or not occurring?" They then completed the questionnaire matrix based on the levels of influence: restrictive, neutral, and facilitating. The influence was rated on a scale from -3 to +3 to measure how much each potential state of the key factors could impact the future regional economic development of Iran's coastal areas. Subsequently, the mode of the experts' opinions was calculated, and the data was prepared for entry into the Scenario Wizard software.

Generally, the Scenario Wizard software offers three types of scenarios: weak scenarios, strong scenarios, and scenarios with the highest compatibility. Based on the 32x32 matrix and considering the future states of each key factor, the Scenario Wizard has provided the following scenarios:

Strong scenarios: 6 scenarios

Scenarios with the highest compatibility: 14 scenarios

Weak scenarios: 255 scenarios

In fact, the Scenario Wizard software narrows down the potential dimensions of scenarios from millions to a few scenarios with a high likelihood of occurrence. This research indicates that six scenarios are considered to have the highest probability of occurring. Among these six scenarios, one scenario has the most favorable conditions compared to the others, three scenarios have favorable conditions, and two scenarios represent critical and unfavorable situations. The Scenario Wizard software does not emphasize the proposed scenarios but merely designs and suggests scenarios based on the relationships between different states. Additionally, the software identifies 14 scenarios with the highest compatibility. This document will address the strong scenarios and those with the highest compatibility, while avoiding discussion of weak scenarios, as it is not feasible to address them.

Strong Scenarios

Strong scenarios are those with a high likelihood of occurrence, as identified by the Scenario Wizard software. In this research, we encounter a scenario board featuring six key scenarios (Table 4). Among these six scenarios, the first one is the most favorable, representing the most desirable conditions. Three other scenarios are in favorable conditions, while the last two scenarios are in critical and unfavorable situations. In any given research, all scenarios might be favorable, or the opposite could be true. Therefore, one should not always expect a wide variety of scenarios.

Table 4: Strong Scenarios Board

Scenario No 1	**Scenario No 2**	**Scenario No 3**	**Scenario No 4**	**Scenario No 5**	**Scenario No 6**
Government Macro Policies Relative improvement in the current situation				**Government Macro Policies** Continuation of the current situation	
Social Welfare and Security Increased well-being, efficiency and usefulness of the community		**Social Welfare and Security** Relative improvement in	**Social Welfare and Security** Increased well-being, efficiency	**Social Welfare and Security** Decrease in the quality and quantity of community needs fulfillment	

	the current situation	and usefulness of the community		
Tourism and Eco-Tourism Growth in eco-tourism and promotion of affordable domestic tourism			**Tourism and Eco-Tourism** Attraction of tourists to leverage natural, social, and cultural assets	**Tourism and Eco-Tourism** **Lack of suitable programs for promoting the region and failure to attract tourists**
Commerce and Trade Improvement and increased access to regional markets			**Commerce and Trade** Lack of a comprehensive plan to join global markets and reduced productivity in utilizing existing opportunities	
Regional Transportation Network Connecting ports and creating regional port hubs using combined transport in major international corridors		**Regional Transportation Network** Relative improvement in the situation	**Regional Transportation Network** Absence of integrated management in the transportation sector and lack of appropriate plans for combined transport	
Employment Creation Job creation for active, skilled, and young workforce	**Employment Creation** Job creation for the current workforce in the region	**Employment Creation** Job creation for active, skilled, and young workforce	**Employment Creation** Numerous deficiencies in job creation and increasing unemployment rates	
Public Income Increase in income and foreign exchange earnings through trade and water transport		**Public Income** Increased support for the active workforce to engage in entrepreneurship based on current conditions	**Public Income** Decrease in public income due to neglect of existing potentials and opportunities	
Inflation Relative improvement in the current situation			**Inflation** Increase in inflation rates and instability of current prices	

Table 5: Strong Scenarios in the Scenario Wizard Software

Scenario One		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the current situation	**A2**
Social Welfare and Security	Increased well-being, efficiency and usefulness of the community	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for active, skilled, and young workforce	**F1**

Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
Scenario Two		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the current situation	**A2**
Social Welfare and Security	Increased well-being, efficiency and usefulness of the community	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
Scenario Three		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the current situation	**A2**
Social Welfare and Security	Relative improvement in the current situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
fourth scenario		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the current situation	**A2**
Social Welfare and Security	Increased well-being, efficiency and usefulness of the community	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Relative improvement in the situation	**E2**
Employment Creation	Job creation for active, skilled, and young workforce	**F1**
Public Income	Increased support for the active workforce to engage in entrepreneurship based on current conditions	**G2**
Inflation	Relative improvement in the current situation	**H2**
Fifth scenario		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Continuation of the current situation	**A3**
Social Welfare and Security	Decrease in the quality and quantity of community needs fulfillment	**B4**
Tourism and Eco-Tourism	Attraction of tourists to leverage natural, social, and cultural assets	**C1**
Commerce and Trade	Lack of a comprehensive plan to join global markets and reduced productivity in utilizing existing opportunities	**D4**

Regional Transportation Network	Absence of integrated management in the transportation sector and lack of appropriate plans for combined transport	**E4**
Employment Creation	Numerous deficiencies in job creation and increasing unemployment rates	**F4**
Public Income	Decrease in public income due to neglect of existing potentials and opportunities	**G4**
Inflation	Increase in inflation rates and instability of current prices	**H4**
Sixth scenario		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Continuation of the current situation	**A3**
Social Welfare and Security	Decrease in the quality and quantity of community needs fulfillment	**B4**
Tourism and Eco-Tourism	Lack of suitable programs for promoting the region and failure to attract tourists	**C4**
Commerce and Trade	Lack of a comprehensive plan to join global markets and reduced productivity in utilizing existing opportunities	**D4**
Regional Transportation Network	Absence of integrated management in the transportation sector and lack of appropriate plans for combined transport	**E4**
Employment Creation	Numerous deficiencies in job creation and increasing unemployment rates	**F4**
Public Income	Decrease in public income due to neglect of existing potentials and opportunities	**G4**
Inflation	Increase in inflation rates and instability of current prices	**H4**

Weak Scenarios

In the 32x32 matrix of this study, a total of 255 weak scenarios have been extracted. Since the probability of these 255 scenarios occurring is negligible and given the vast amount of information associated with these scenarios, they will not be discussed in this section.

High Compatibility Scenarios (Plausible Scenarios)

Data analysis using the Scenario Wizard software has identified fourteen scenarios with higher likelihoods compared to others. The likelihood of the remaining scenarios is predicted to be very low. These scenarios result from the interactions between various factors and conditions. Essentially, these scenarios emerge from how one condition affects the occurrence or limitation of another condition. This complex processing cannot be achieved by the human mind alone but is made possible through highly precise software (Table 6). (Table 7) displays the possible states, broken down by the fourteen scenarios.

Table 6: Plausible and Highly Compatible Scenarios Boar

Scenario No 1	**Scenario No 2**	**Scenario No 3**	**Scenario No 4**	**Scenario No 5**	**Scenario No 6**	**Scenario No 7**	**Scenario No 8**	**Scenario No 9**	**Scenario No 10**	**Scenario No 11**	**Scenario No 12**	**Scenario No 13**	**Scenario No 14**
Government Macro Policies Relative improvement in the current situation										**Government Macro Policies** Continuation of the current situation	**Government Macro Policies** Lack of spatial planning policies tailored to regional	**Government Macro Policies** Continuation of the current situation	

										capabilities		
Social Welfare and Security Relative improvement in the current	**Social Welfare and Security** Increased well-being, efficiency and usefulness of the community	**Social Welfare and Security** Relative improvement in the current	**Social Welfare and Security** Increased well-being, efficiency and usefulness of the community	**Social Welfare and Security** Relative improvement in the current	**Social Welfare and Security** Increased well-being, efficiency and usefulness of the community	**Social Welfare and Security** Relative improvement in the **current**	**Social Welfare and Security** Increased well-being, efficiency and usefulness of the community	**Social Welfare and Security** Relative improvement in the current	**Social Welfare and Security** Decrease in the quality and quantity of community needs fulfillment			
Tourism and Eco-Tourism Growth in eco-tourism and promotion of affordable domestic tourism									**Tourism and Eco-Tourism Lack of suitable programs for promoting the region and failure to attract tourists**	**Tourism and Eco-Tourism** Attraction of tourists to leverage natural, social, and cultural assets	**Tourism and Eco-Tourism Lack of suitable programs for promoting the region and failure to attract tourists**
Commerce and Trade Improvement and increased access to regional markets									**Commerce and Trade** Lack of a comprehensive plan to join global markets and reduced productivity in utilizing existing opportunities		

<table>
<tr><td colspan="4">Regional Transportation Network
Connecting ports and creating regional port hubs using combined transport in major international corridors</td><td colspan="2">Regional Transportation Network
Relative improvement in the situation</td><td>Regional Transportation Network
Absence of integrated management in the transportation sector and lack of appropriate plans for combined transport</td></tr>
<tr><td>Employment Creation
Job creation for active, skilled, and young workforce</td><td>Employment Creation
Job creation for the current workforce in the region</td><td>Employment Creation
Job creation for active, skilled, and young workforce</td><td>Employment Creation
Job creation for the current workforce in the region</td><td>Employment Creation
Job creation for active, skilled, and young workforce</td><td>Employment Creation
Job creation for the current workforce in the region</td><td>Employment Creation
Numerous deficiencies in job creation and increasing unemployment rates</td></tr>
<tr><td colspan="4">Public Income
Increase in income and foreign exchange earnings through trade and water transport</td><td colspan="2">Public Income
Increased support for the active workforce to engage in entrepreneurship based on current conditions</td><td>Public Income
Decrease in public income due to neglect of existing potentials and opportunities</td></tr>
<tr><td>Inflation
Increased investment attraction and becoming an investment hub</td><td colspan="4">Inflation
Relative improvement in the current situation</td><td>Inflation
Continuation of the current situation.</td><td>Inflation
Increase in inflation rates and instability of current prices</td></tr>
</table>

Table 7: Plausible Scenarios in the Scenario Wizard Software

Scenario one

Key Drivers	Scenarios	Scenario Code
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Relative improvement in the situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for active, skilled, and young workforce	**F1**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**

Inflation	Increased investment attraction and becoming an investment hub	**H1**
Scenario Two		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Relative improvement in the situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Increased investment attraction and becoming an investment hub	**H1**
Scenario three		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Increase in well-being, efficiency and productivity of society	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for active, skilled, and young workforce	**F1**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
Scenario four		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Relative improvement in the situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for active, skilled, and young workforce	**F1**

Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
scenario five		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Increase in well-being, efficiency and productivity of society	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
scenario six		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Relative improvement in the situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Connecting ports and creating regional port hubs using combined transport in major international corridors	**E1**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increase in income and foreign exchange earnings through trade and water transport	**G1**
Inflation	Relative improvement in the current situation	**H2**
scenario seven		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Increase in well-being, efficiency and productivity of society	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Relative improvement in the current situation	**E2**

Employment Creation	Job creation for active, skilled, and young workforce	**F1**
Public Income	Increased support for the active workforce for entrepreneurship suitable to existing conditions	**G2**
Inflation	Relative improvement in the current situation	**H2**
Scenario eight		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Relative improvement in the situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Relative improvement in the current situation	**E2**
Employment Creation	Job creation for active, skilled, and young workforce	**F1**
Public Income	Increased support for the active workforce for entrepreneurship suitable to existing conditions	**G2**
Inflation	Relative improvement in the current situation	**H2**
Scenario nine		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Increase in well-being, efficiency and productivity of society	**B1**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**
Regional Transportation Network	Relative improvement in the current situation	**E2**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increased support for the active workforce for entrepreneurship suitable to existing conditions	**G2**
Inflation	Relative improvement in the current situation	**H2**
Scenario ten		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Relative improvement in the situation	**A2**
Social Welfare and Security	Relative improvement in the situation	**B2**
Tourism and Eco-Tourism	Growth in eco-tourism and promotion of affordable domestic tourism	**C2**
Commerce and Trade	Improvement and increased access to regional markets	**D2**

Regional Transportation Network	Relative improvement in the current situation	**E2**
Employment Creation	Job creation for the current workforce in the region	**F2**
Public Income	Increased support for the active workforce for entrepreneurship suitable to existing conditions	**G2**
Inflation	Relative improvement in the current situation	**H2**
Scenario eleven		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Continuation of the current situation	**A3**
Social Welfare and Security	Decrease in the quality and quantity of community needs	**B4**
Tourism and Eco-Tourism	Lack of appropriate programs to introduce the region and attract tourists	**C4**
Commerce and Trade	Lack of a comprehensive program to join global markets and reduced efficiency in utilizing opportunities	**D4**
Regional Transportation Network	Lack of integrated management in transport and inadequate programs in combined transport	**E4**
Employment Creation	Numerous deficiencies in job creation and increased unemployment rate	**F4**
Public Income	Decrease in public income due to neglect of existing capabilities and opportunities	**G4**
Inflation	Continuation of the current situation	**H3**
Scenario twelve		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Lack of spatial planning policies tailored to regional capabilities	**A4**
Social Welfare and Security	Decrease in the quality and quantity of community needs	**B4**
Tourism and Eco-Tourism	Lack of appropriate programs to introduce the region and attract tourists	**C4**
Commerce and Trade	Lack of a comprehensive program to join global markets and reduced efficiency in utilizing opportunities	**D4**
Regional Transportation Network	Lack of integrated management in transport and inadequate programs in combined transport	**E4**
Employment Creation	Numerous deficiencies in job creation and increased unemployment rate	**F4**
Public Income	Decrease in public income due to neglect of existing capabilities and opportunities	**G4**
Inflation	Continuation of the current situation	**H3**
Scenario thirteen		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Continuation of the current situation	**A3**

Social Welfare and Security	Decrease in the quality and quantity of community needs	**B4**
Tourism and Eco-Tourism	Attraction of tourists to leverage natural, social, and cultural assets	**C1**
Commerce and Trade	Lack of a comprehensive program to join global markets and reduced efficiency in utilizing opportunities	**D4**
Regional Transportation Network	Lack of integrated management in transport and inadequate programs in combined transport	**E4**
Employment Creation	Numerous deficiencies in job creation and increased unemployment rate	**F4**
Public Income	Decrease in public income due to neglect of existing capabilities and opportunities	**G4**
Inflation	Increase in inflation rate and instability in existing prices	**H4**
Scenario fourteen		
Key Drivers	**Scenarios**	**Scenario Code**
Government Macro Policies	Continuation of the current situation	**A3**
Social Welfare and Security	Decrease in the quality and quantity of community needs	**B4**
Tourism and Eco-Tourism	Lack of appropriate programs to introduce the region and attract tourists	**C4**
Commerce and Trade	Lack of a comprehensive program to join global markets and reduced efficiency in utilizing opportunities	**D4**
Regional Transportation Network	Lack of integrated management in transport and inadequate programs in combined transport	**E4**
Employment Creation	Numerous deficiencies in job creation and increased unemployment rate	**F4**
Public Income	Decrease in public income due to neglect of existing capabilities and opportunities	**G4**
Inflation	Increase in inflation rate and instability in existing prices	**H4**

Table 8: Status of the 14 Scenarios Based on the Four Spectrum Categories

scenarios	**Desirability Level**			
	Fully desirable	**Relatively desirable**	**On the brink of crisis**	**Undesirable**
Scenario 1	**4**	**4**	**0**	**0**
Scenario 2	**3**	**5**	**0**	**0**
Scenario 3	**4**	**4**	**0**	**0**
Scenario 4	**3**	**5**	**0**	**0**
Scenario 5	**3**	**5**	**0**	**0**
Scenario 6	**2**	**6**	**0**	**0**

Scenario 7	**2**	**6**	**0**	**0**
Scenario 8	**1**	**7**	**0**	**0**
Scenario 9	**1**	**7**	**0**	**0**
Scenario 10	**0**	**8**	**0**	**0**
Scenario 11	**0**	**0**	**2**	**6**
Scenario 12	**0**	**0**	**1**	**7**
Scenario 13	**1**	**0**	**1**	**6**
Scenario 14	**0**	**0**	**1**	**7**
Total	**24**	**57**	**5**	**26**

The fourteen scenarios are a combination of the potential conditions, especially the relatively desirable, undesirable, and fully desirable states in the scenarios. In Table ..., a total of 112 conditions have been identified based on the fourteen scenarios. Among these, 24 conditions are in the fully desirable state, accounting for 21.4% of all conditions. Additionally, 57 conditions (50.9%) are in the relatively desirable state, 5 conditions (4.5%) are on the brink of crisis, and 26 conditions (23.2%) are in the undesirable state (see Diagram 1).

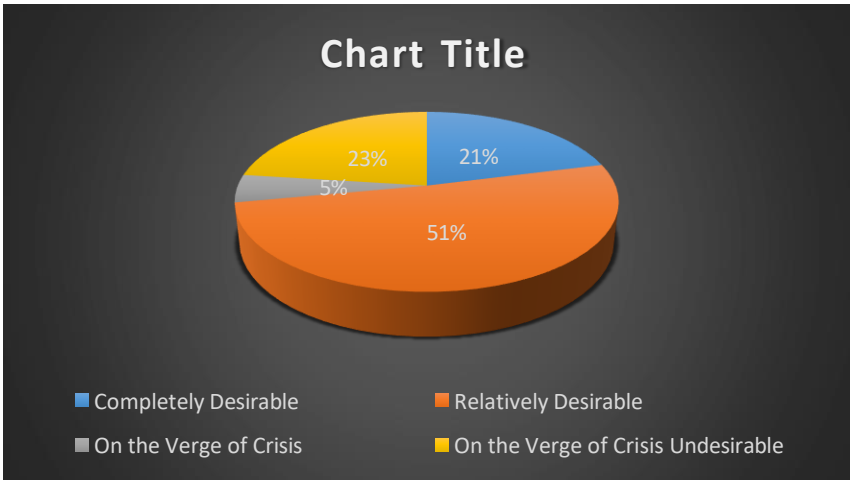

Diagram 1: Percentages of Each Condition, Source: Research Findings, 2022

Figure 3 presents the evaluation of the scenario matrix using the network system. In the network system, the role of key factors in the analysis system is assessed and is used to construct real scenarios.

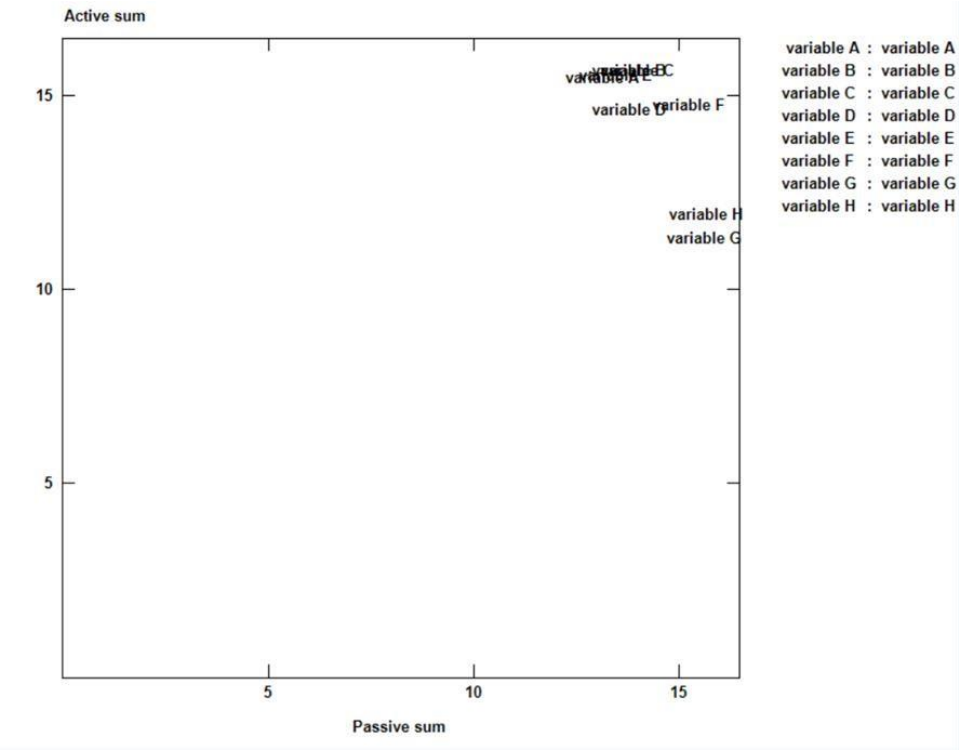

Figure 3: Scenarios system network

In the network system of scenarios, key factors positioned at the top left and top of the network are identified as control factors of the system. Key factors located at the bottom and right side of the network are considered dependent key factors, which follow the events of the system without influencing them. Additionally, key factors positioned at the top right of the network are influential key factors that have a significant impact on the system (Figure 7).

Scenario Portfolio Analysis

Spring Economic Development Scenarios for Iran's Oceanic Coasts

Scenario 1 Overview:

Among the spring scenarios in this study, Scenarios 1 and 3 have better conditions compared to Scenarios 2, 4, 5, 6, 7, 8, 9, and 10. In Scenario 1, four key factors are evaluated as highly favorable: the regional transportation network with the potential scenario of connecting ports and creating regional port hubs using combined transport in major international corridors; employment creation with the potential scenario of creating jobs for active, skilled, and young workers; public income with the potential scenario of increasing income and foreign exchange earnings through trade and water transport; and inflation with the potential scenario of increasing investment attraction and becoming an investment hub. Strengthening transit capacities and attracting investments for the formation of port hubs, considering Iran's position at the crossroads of railways and major global corridors, can lead to increased employment and the utilization of human resources in these areas. Enhancing transit benefits, attracting investment, and job creation will result in increased income and reduced inflation rates.

In this scenario, the government's macro policies and social welfare and security are in relatively improved and favorable conditions. In this context, policies such as allocating a budget in line with regional capabilities could lead to the construction of new ports and docks with increased water transport and transit capacity, which would result in greater foreign exchange earnings and improved social welfare and security on Iran's oceanic coasts. Additionally, in the key factor of tourism, the situation of increasing eco-tourism and promoting affordable domestic tourism, and in the key factor of commerce and trade, the improvement and increased access to regional markets are described as relatively favorable. Therefore, by introducing tourist attractions and striving for transit marketing among regional countries, the economic development of the oceanic coasts can be strengthened.

Description of Scenario 3:

This scenario differs from Scenario 1 only in the probable situations of the key factors of social welfare and security, and inflation. In the key factor of social welfare and security, the scenario is in a completely favorable condition with an increase in well-being, efficiency, and societal benefits. For the key factor of inflation, the scenario shows a relatively favorable condition with a relative improvement in the current situation.

Description of Scenario 2:

In Scenario 2, there is only one key factor's probable situation that differs from the set of probable situations of other factors in Scenario 1. The key factor of employment creation, with the situation of job creation for the current workforce in the region, is in a relatively favorable condition and differs from the other key factors' situations. The rest of the key factors' situations are repetitive in comparison to Scenario 1.

Description of Scenario 4:

Scenario 4 differs from Scenario 1 only in the probable situation of the key factor of inflation. In this scenario, inflation is placed in a relatively favorable condition with a slight improvement in the current situation. The other key factors are similar to those in Scenario 1, which were analyzed in the proposed situations using the Scenario Wizard software.

Description of Scenario 5:

This scenario differs from Scenario 1 in the probable situations of three key factors. The key factor of social welfare and security is in an entirely favorable condition with increased well-being, efficiency, and productivity in society. The key factor of job creation is in a relatively favorable condition with the creation of employment opportunities for the existing workforce in the region. Additionally, the key factor of inflation is also in a relatively favorable condition with a slight improvement in the current situation.

Description of Scenario 6:

In Scenario 6, only the probable situations of two key factors—job creation and inflation—differ from those in Scenario 1. The key factor of job creation is in a relatively favorable condition with the creation of employment opportunities for the existing workforce in the region. The key factor of inflation is also in a relatively favorable condition with a slight improvement in the current situation.

Description of Scenario 7:

In this scenario, four key factors—social welfare and security, regional transportation network, public income, and inflation—differ from their probable situations in Scenario 1. Social welfare and security is in a completely favorable condition with increased well-being, efficiency, and utility of the community. The regional transportation network is in a condition of relative improvement in the existing situation. Public income is in a relatively favorable condition with increased support for active workforce entrepreneurship suitable for the current conditions. Inflation is also evaluated as relatively favorable with a slight improvement in the current situation.

Description of Scenario 8:

In this scenario, the probable situations for all key factors, except for the job creation for active, specialized, and young individuals in the job creation key factor (which is in a completely favorable condition), are evaluated as relatively favorable.

Description of Scenario 9:

In Scenario 9, all probable situations for all key factors, except for the increased well-being, efficiency, and utility of the community in the social welfare and security key factor (which is in a completely favorable condition), are evaluated as relatively favorable.

Description of Scenario 10:

In this scenario, all key factors are depicted in relatively favorable conditions.

Autumn Scenarios for Economic Development of Iran's Oceanic Coasts.

Description of Scenario 13:

Autumn scenarios are considered unfavorable with critical conditions. In Scenario 13, the key factor of tourism and eco-tourism with the condition of attracting tourists to benefit from natural, social, and cultural resources is the only factor in fully favorable conditions. Additionally, the key factor of government macro policies is in the crisis threshold with the continuation of the existing conditions. This scenario places the remaining six key factors—social welfare and security, commerce and trade, regional transportation network, employment creation, public income, and inflation—in fully unfavorable conditions. Therefore, this scenario, based on the current conditions, indicates a completely critical situation with adverse consequences for the future. Given the evaluated potential conditions, the autumn scenarios show that government macro policies have not paid sufficient attention to the maritime focus and strategic importance of Iran's oceanic coasts. Furthermore, a reduction or lack of focus on enhancing port infrastructure leads to a lack of competitiveness in transit marketing and reduced trade and water transport volumes, and a decrease in foreign exchange earnings. Additionally, not properly utilizing tourism, aquaculture, and other potential capabilities results in reduced attraction for young labor, increased unemployment, decreased employment creation, social welfare, and public income. It should also be noted that failure to provide conditions for investors and reduced diplomatic relations with neighboring countries will result in a significant increase in economic stagnation and inflation, which will lead to a decrease in the quality of life and welfare for people across the country, especially for the population residing in Iran's oceanic coasts.

Description of Scenario 11:

In Scenario 11, potential conditions for all key factors, except for two—government macro policies with the status of continuation of the existing situation and inflation with the status of continuation of the existing situation—are evaluated as critical and fully unfavorable. Both of these factors are in the crisis threshold condition.

Description of Scenario 12:

In Scenario 12, all key factors are in fully unfavorable conditions with critical status, except for the key factor of inflation with the status of continuation of the existing situation, which is in the crisis threshold condition.

Description of Scenario 14:

In Scenario 14, only the key factor of government macro policies is in the crisis threshold condition with the status of continuation of the existing situation, while all other key factors are evaluated as critical and fully unfavorable.

III. **CONCLUSION**:

In recent decades, regional economic development planning has received increasing attention in order to reduce the gap between regions. Given the importance of economic development in regions, especially significant coastal areas, it is highly beneficial to use foresight knowledge for managing coastal regions. This research utilized 8 identified key drivers and the Scenario Wizard software to develop impactful scenarios for regional economic development of the oceanic coasts of Iran.

After applying the key drivers and various potential states for these factors, the process for developing scenarios was prepared. Based on the determination of potential future states for the oceanic coasts of Iran, a total of 32 different states for 8 key drivers were designed, covering a range from fully favorable to unfavorable conditions. Subsequently, by designing the states and preparing a 32x32 matrix, a questionnaire was prepared and provided to experts. In the next step, the data was prepared for entry into the Scenario Wizard software by obtaining the mode of the experts' opinions. The output from the Scenario Wizard software included three types of scenarios: weak scenarios, strong scenarios, and scenarios with the highest compatibility.

The results of this research indicate that six scenarios with the highest likelihood of occurrence are considered as strong scenarios. Among these six scenarios, one scenario has completely favorable conditions compared to the others, three scenarios have favorable conditions, and two scenarios display critical and unfavorable conditions. The scenarios with the highest compatibility in this research amounted to 14 scenarios, which were detailed in two groups: spring scenarios and autumn scenarios. Additionally, weak scenarios, numbering 255, were not addressed, as explaining them would be impractical.

Then, the plausible scenarios or scenarios with the highest compatibility, based on the proposed probable conditions, were categorized into two groups: spring scenarios and autumn scenarios. Among the spring scenarios

of this research, scenarios 1 and 3 have better conditions compared to scenarios 2, 4, 5, 6, 7, 8, 9, and 10. In scenario 1, four key factors are evaluated under optimal conditions: the regional transport network with the probable condition of linking ports and creating a regional port hub using combined transport in major international corridors, job creation with the probable condition of providing employment for active, skilled, and young individuals, income levels with the probable condition of increased revenue and foreign exchange earnings through trade and maritime transport, and the inflation factor with the probable condition of increased investment attraction and becoming an investment hub under very favorable conditions. Strengthening transit capacities and attracting investments to form port hubs, given Iran's position at the crossroads of railways and major global corridors, could lead to increased job creation and employment in these areas. Enhancing transit capacity, attracting investments, and job creation will result in higher income and a reduction in inflation rates.

In scenario number 1, the macroeconomic policies of the government and social welfare and security are in a condition of relatively improved and fairly favorable status. In this context, policies such as allocating budgets in line with regional capabilities could lead to the construction of new ports and docks, increasing maritime and transit transport capacity. This would result in increased foreign exchange earnings and enhanced social welfare and security along Iran's oceanic coasts.

Regarding the key factor of tourism, there is an increase in eco-tourism and promotion of affordable domestic tourism, while in the key factor of commerce and trade, improvement and increased access to regional markets are described as relatively favorable conditions. Therefore, by introducing tourist attractions and striving for transit marketing among regional countries, it is possible to support the economic development of oceanic coasts. Scenario number 3 differs from scenario number 1 only in the probable conditions for the key factors of social welfare and security and inflation. For social welfare and security, the condition is described as a significant increase in well-being, efficiency, and utility of the community under very favorable conditions, while for inflation, it is characterized by a relative improvement in the existing situation under relatively favorable conditions.

Autumn scenarios are considered unfavorable, with critical conditions. In this research, scenarios number 13, 11, 12, and 14 fall into the autumn scenario group. In scenario number 13, the key factor of tourism and eco-tourism is the only element that is in a very favorable condition, with a focus on attracting tourists to benefit from natural, social, and cultural assets. However, the key factor of government macroeconomic policies is in a crisis-prone state, with the continuation of the existing situation approaching a critical point. The remaining six key factors—social welfare and security, commerce and trade, regional transport network, job creation, income levels, and inflation—are all in very unfavorable conditions. Therefore, this scenario represents a critical situation with adverse future consequences. According to the assessed conditions of autumn scenarios, the government macroeconomic policies lack the necessary focus on maritime and oceanic coastlines of Iran, failing to leverage the significant and strategic potential of these areas. Additionally, reduced or insufficient attention to port infrastructure development results in decreased competitiveness in transit marketing, reduced trade, and lower maritime transport and foreign exchange earnings. Moreover, improper utilization of tourism, aquaculture, and other capabilities leads to lower youth employment and increased unemployment, which in turn reduces job creation, social welfare, and income levels. Furthermore, the lack of favorable conditions for investors and reduced diplomatic relations with neighboring countries will lead to a substantial increase in economic stagnation and inflation. This will result in a decrease in the quality of life and well-being for people across the country, particularly for those living along Iran's oceanic coasts.

It is worth noting that the likelihood of the spring scenarios occurring is not equal; therefore, the specified scenarios among the millions of possible scenarios are proposed as recommended scenarios. Given the importance of regional economic development, particularly for oceanic coastlines, and the high dynamism of these areas, the spring scenarios can offer a favorable outlook for the economic development of these regions.

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