BLUEAIR PROJECT

BLUE GROWTH SMART ADRIATIC IONIAN S3

D.T.2.2.1.

EVALUATION FRAMEWORK TOOL

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Contents

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List of Abbreviations

ADRION (AIR)	Adriatic-Ionian (region)
BE	Blue Economy
BG	Blue Growth
BSI	Business Support Institution
EDP	Entrepreneurial Discovery Process
EC	European Commission
ERA	European research area
ERDF	European Regional Development Fund
EU	European Union
EUSAIR	EU Strategy for the Adriatic and Ionian Region
GPC	High Level Group for Joint Programming
GVC	Global value chain
MR	Macro-region
MRS	Macro-regional Strategy
RIS3	Research and Innovation Smart Specialisation Strategy
R&D	Research and Development
RDI	Research, Development and Innovation
S3	Smart specialization strategy
VC	Value chain
WP	Work Package

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Summary

Background

The **main goal** of **BLUEAIR project** is enhancing *institutional capacities* of ADRION countries/regions in the definition of a common approach towards the implementation of the **S3 policy on Blue Growth** at macro-regional level. Blue Growth can represent a **space of opportunities** in the broader context of the **Blue Economy** where it is possible to achieve innovative growth on the principles of **sustainability** and **protection** of the seas. "EU's Blue Economy encompasses all sectoral and cross sectoral economic activities related to the oceans, seas and coasts, including those in the EU's outermost regions and landlocked countries. This includes the closest direct and indirect support activities necessary for the sustainable functioning and development of these economic sectors within the single market. It comprises emerging sectors and economic value based on natural capital and non-market goods and services"[1].

Objective and Approach

Among other specific objectives, **BLUEAIR project aims to identify Blue Growth areas** of macro regional interest and exploit potentials for transnational cooperation in innovation and **Smart specialisation strategies (S3)** development on Blue Growth in the Adriatic- Ionian sea area. The BLUEAIR project strategic framework consists of several pillars (strategies or initiatives) directly related to the Blue Growth domain: *EU Blue Economy Report*, *EUSAIR strategy*, *New Industrial Strategy for Europe*, *European Green Deal* and *European Data Strategy* with a clear focus on ADRION countries/regions.

This document – *Evaluation framework tool* serves for adaptation of known evaluation frameworks and developing analytical tools especially for: a) complementarity analysis of national/regional S3s overlapping of priority areas and b) development of regional Blue Growth related value chains analysis and identifying gaps within the value chains.

Whereas **self-assessment** report should provide guidelines for better embedding of EUSAIR targets and goals in national/regional RIS3 documents and finding new potential funding for EUSAIR determined goals and targets, **value chain analysis** should provide a potential thematic platform for potential international collaboration in ADRION macro-region regarding Blue economy. As already mentioned, enabling conditions for Smart specialization strategies in new financial framework 2021-2027 propose international collaboration. EUSAIR macro-regional strategy itself is based on international/interregional collaboration. Mapping potential value chains in sectors of blue economy could provide a thematic platform for improved joint international effort by members of ADRION macro-region in tackling EUSAIR proposed goals and targets.

Main **goal** of the *Evaluation framework tool* is to develop structured survey for carrying out complementarity analysis of national/regional S3 strategies regarding the overlap of priority areas, along with the methods of performing value chain analysis and benchmarking for the final WP activity 2.2. document – *Complementarity and Alignment report*. *Evaluation framework tool* is intended for projects' implementing and supporting

[1] European Commission (2019). The EU Blue Economy Report. 2019. Publications Office of the European Union. Luxembourg.

partners, facilitators and policy makers responsible for the projects' Innovations strategy and accompanying Action plan.

Document structure

The document consist of two main chapters.

Chapter 1. – Overview - Analysis of national/regional S3s' overlap of priority areas: introduces and defines the approach to analysis of national/regional S3s' overlap of priority areas and its general goals along with policy alignment approach. Chapter gives an overview of the European approach to the Smart specialization processes and the concept of macro-regions as areas of cooperation and synergy development by providing opportunities for cross-fertilizations across countries and domains of intervention. In order to bring up the level of alignment and cooperation, state of alignment and complementarity analysis of national/regional RIS3 documents and EUSAIR is needed. Finally, a systematic view of the self-assessment tool is provided.

Chapter 2. – Overview – Value Chain analysis: defines and elaborates general GVC concept and processes and methodological approach to the value chain analysis and benchmarking. Mapping the value chain is all about understanding beyond the traditional areas of focus on supply chain partners, taking a more comprehensive look at the entire product or service chain by creating a map of the structure of the value chain and all entities within it and identifying their linkages and interaction. Finally, in order to understand the process of benchmarking and value chain analysis, an example case scenario is designed with conclusions.

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1. Overview - Analysis of national/regional S3s' overlap of priority areas

1.1. Introduction

Since 2014, EU members' RDI policies have been based on Smart specialization approach. Smart specialization process "encourages the selection of technological fields or sectors, on which to prioritise and concentrate investment, in order to optimise the economic benefits and impacts"[2]. Furthermore, Smart specialization process is not about reinforcing already robust economic activities, but rather about facilitating the "emergence of strategic regional sectors based on latest market and technological trends and driving cross doctoral cooperation in order to position the territory on emerging industrial value chains in which the region has differentiation assets"[3].

On the other hand, following EU enlargement of 2004, EU has been "developing concept of macro-regions, as an area that includes territory from a number of different countries or regions associated with one or more common features"[4]. Furthermore, macro-regions were envisaged as areas of cooperation and synergy development for which "no new legislation, no new institutions and no new money"[5] will be provided, but instead would rely on "better alignment of funding, better coordination and new ideas"[6].

Macro-regional strategies, that were "initially launched in the 2007-2013 programming period", are therefore meant to provide "alignment with EU's goals of inclusive and sustainable development, by enhancing synergies among neighbouring countries/regions"[7]. Fundamental premise of macro-regional strategy is to boost "complementarities and synergies among regions, by providing opportunities for cross-fertilizations across countries and domains of interventions"[8].

Furthermore, as it is noted in EC report[9] on implementation of EU macro-regional strategies, key challenge of macro-regional strategies in the period from 2021-2027 will be "bridging the gap between MRS's needs

[2] Region Bourgogne Franche Comte (2021) Regional Innovation Strategy towards Smart Specialization (RIS3) 2021-2027. https://www.bourgognefranchecomte.fr/sites/default/files/2021-08/RIS3_Synthese_VA.pdf. Accessed: 20.03.2022.
[3] Ibid.
[4] Tursie, C. (2015), Macro-regional strategies of European integration. What can the Danube region learn from the Baltic Sea Region?, Social nad Behevioral Sciences 183, 1-10. https://www.sciencedirect.com/science/article/pii/S1877042815031146 Accessed: 20.03.2022.
[5] ibid.
[6] Ibid.
[7] EUSALP Action Group 1 – RIS3 in macro-regional strategies: building comparative framework to learn from other regions. https://www.alpine-region.eu/sites/default/files/uploads/event/1935/attachments/eusalp_action_group_1_-_ris3_workshop_25_june_2019_milan_programme_and_abstracts__2.pdf . Accessed: 20.03.2022.
[8] ibid.
[9] European Commission (2020) Report from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions on the implementation of EU macro-regional strategies. SWD(2020) 186 final . https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0578&from=EN . Accessed: 20.03.2022.

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and funding opportunities"[10]. Thus far, coordination between the MRS and ESI fund programmes has been limited and mainly concentrated on European Territorial Cooperation (Interreg) programs.

Consequently, in forthcoming period, reaching the goals and targets proposed by EUSAIR will be heavily dependent on embedding the EUSAIR goals and targets in national/regional RIS3 documents of the ADRION macro-region. Embedding goals and targets of EUSAIR in national/regional RIS3 documents would reinforce the aim of reaching targets set out in EUSAIR through ERDF funds.

In order to bring up the level of alignment and cooperation regarding RDI activities in Adriatic-Ionian (ADRION) macro-region in context of Blue Growth, state of alignment and complementarity analysis of national/regional RIS3 documents and EUSAIR is needed.

1.2. Defining Policy alignment

Policy alignment, as defined by European Research Area and Innovation Committee's High level group for Joint Programming (GPC), represents "strategic approach undertaken by Member States to modify their national research programmes, priorities or activities as a consequence of the adoption of **joint research priorities** in the context of Joint Programming, with a view **to improve the efficiency of investment in research** at the level of Member States and the European Research Area (ERA).[11]"

Furthermore, "alignment can be implemented via (joint) actions undertaken by Member States or Associated Countries that **aim to foster greater coordination and complementarities** among national research priorities, programmes and activities around jointly identified strategic priorities (e.g., a Strategic Research Agenda)."[12] Thus, alignment as defined in ERALEARN2020 document[13] **aims** to:

1) **increase synergies** amongst (existing) national research programmes and activities;
2) **trigger cost-efficiencies** in research financing (e.g. via leverage effects);
3) **enhance** the level of scientific **performance**;
4) help **identify** research **gaps** and
5) **maximise research impact** on policymaking and innovation, in order to tackle societal challenges more effectively.

In addition, policy alignment may vary with respect to extensiveness. Therefore, regarding level of intensity of alignment, **three distinct types of alignment** are recognized:

1) Strategic alignment,
2) Operational alignment,
3) Financial alignment.

[10] Ibid.
[11] ERA-LEARN2020 (2015) Deliverable 4.1 – Report on the Definition and Typology of alignment. , https://www.era-learn.eu/documents/d4-1_reportonthedefinitionandtypologyofalignment_inra_final_nov2015.pdf. Accessed: 20.03.2022.
[12] Ibid
[13] Ibid

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Strategic alignment is defined as "finding the common interest for collaboration by trying to identify converging, complementing or overlapping areas across the different national strategies and programme foci.[14]" **Operational alignment** "refers to the whole chain of operationalisation of the jointly defined strategy i.e. design, implementation, evaluation of joint activities, and dissemination of results.[15] Finally, **financial alignment** refers to "making timing of funding, participation and funding rules in the different national programmes compatible.[16]"

Obviously, for the purpose of this document, and in line with project objectives, **strategic alignment will be the subject of the self-assessment exercise**.

Although there are quite a few actions and instruments currently in use in Europe that promote and facilitate implementation of alignment, in this document we will concentrate only on analysis of present state of the alignment between EUSAIR and national/regional RIS3 documents that will be carried out through adaptation of self-assessment framework.

Self-assessing level of alignment of national/regional RIS3s with proposed goals and targets of EUSAIR will provide us with **opportunity to provide recommendations** for further increasing the alignment in order to support reaching the goals and targets proposed by EUSAIR. **Purpose** of the self-assessment is to provide general insights and to compare practices regarding alignment processes in ADRION macro-region for better alignment of RIS3 strategies to EUSAIR. Also, it **can serve as a starting point for potential internalization** of RDI activities.

1.3. Self-assessment framework

Self-assessment framework was developed following Mutual Learning Exercise: Alignment and interoperability of National research systems[17], and with aim to "support the countries in the analysis of the national situations and to communicate opportunities for improvements in a structured manner."[18] As already mentioned, self-assessment of alignment will be carried out on strategic alignment level.

The tool is based on self-assessment framework developed for self-assessment of alignment of national Science and Research policies within ERA-LEARN[19], a support platform for the R&I partnership community, which is funded through support action (CSA) by Horizon 2020. Adaptation of the tool was done through updating the topics relevant to EUSAIR and the ADRION macro-region.

Key issues and questions regarding state of alignment of EUSAIR and national/regional RIS3 documents were drawn from various sources such as *Report from the commission to the European parliament, the council, the European economic and social committee and the committee of regions on the implementation of EU macro-*

[14] ibid
[15] ibid
[16] Ibid.
[17] European Commission. *MLE on Alignment and Interoperability of National Research Programmes.* https://ec.europa.eu/research-and-innovation/sites/default/files/rio/report/MLE-AI_final%2520report_KI-AX-17-010-EN-N.pdf Accessed 20.03.2022.
[18] Ibid.
[19] ERA Learn. https://www.era-learn.eu/service/about. Accessed: 20.03.2022.

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regional strategies[20] and *Briefing of the European parliament think tank*[21] regarding implementation of macro-regional strategies.

Key elements of future development regarding EUSAIR implementation, which were recognized in aforementioned documents are:

- Increased political commitment to implementation of EUSAIR macro-regional strategy,
- To more effectively embed the goals and targets set out in EUSAIR macro-regional strategy into new Programming period 2021-2027,
- Finding various novel sources of funding for achieving EUSAIR goals and targets.

Self-assessment tool consists in total of **two themes**. **First theme** is participants' assessment of the national situation regarding topics in question, followed by **second theme** which deals with similar assessment where participants have to evaluate barriers to improvement. Both steps are evaluated through adoption of the type of Likert scale. Furthermore, in both parts of self-assessment tool, participants are called to describe both topics. Systematic view of the self-assessment tool is provided in table 1 of this document.

As already mentioned, key topics of self-assessment framework were extracted from various documents. Topics focus on themes of political commitment, effective embedding of goals and targets of EUSAIR macro-regional strategy into new RIS3 documents for forthcoming financial period (2021-2027) and exploring possibilities of different sources of funding for EUSAIR activities in addition to those allocated through Interreg programmes.

For each of key factors, participant should describe national situation and afterwards give subjective score (1-5) of alignment.

[20] European Commission (2020) Report from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions on the implementation of EU macro-regional strategies. SWD(2020) 186 final

[21] European parliament think tank (2022) Briefing - Implementation of macro-regional strategies https://www.europarl.europa.eu/RegData/etudes/BRIE/2017/608717/EPRS_BRI(2017)608717_EN.pdf . Accessed: 20.03.2022.

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Table 1. Self-assessment survey (alignment)

Analytical framework for self-assessment of the Degree of Alignment of RIS3 strategies and EUSAIR regarding Blue Growth								
		DEGREE OF ALIGNMENT					SELF-ASSESSMENT	
		1	2	3	4	5	National/regional situation	Score for alignment
		Very low degree of alignment	-	-	-	Very high degree of alignment	How would you describe national situation?	What score would you give (1-5) for the national situation?
	Key factors							
1.	Political support	Weak political support for aligning national/regional RIS3 strategies with EUSAIR				Strong political support for aligning national/regional RIS3 strategies with EUSAIR		
2.	Platforms for stakeholder's involvement	No processes to involve others outside direct participants				Formal frameworks with systematic processes to involve relevant stakeholders		
3.	Communication to build political support	No systematic contact with policy makers				Regular and systematic dissemination to, and engagement with, policy makers.		
4.	Lead ministry /agency with dedicated resources to enable effective participation	Participation in EUSAIR activities is based on bottom up decisions				Participation in EUSAIR activities is delegated to a lead organization from the policy level		
5.	Coordination between	No cooperation between ministries/agencies on EUSAIR agenda.				Effective coordination between ministries/agencies		

	ministries and agencies	No formal rules on EUSAIR governance.				on EUSAIR agenda with clearly defined roles and responsibilities.		
6.	**Funding**	Funding of EUSAIR activities exclusively from INTERREG and IPA II funds				Funding of EUSAIR activities available from other funds (ESIF, ENI, national, etc)		
7.	**National/regional relevant RIS3 stakeholders**	EUSAIR priorities are not on the agenda regarding programming of new RIS3 document.				EUSAIR priorities are embedded and relevant stakeholders are involved.		

2. Overview – Value Chain analysis

Whereas the **self-assessment** report should provide guidelines for better embedding of EUSAIR targets and goals in national/regional RIS3 documents and finding new potential funding for EUSAIR determined goals and targets, the **value chain analysis** should provide a potential thematic platform for potential international collaboration in ADRION macro-region regarding Blue economy. As already mentioned, enabling conditions for Smart specialization strategies in new financial framework 2021-2027 propose international collaboration. EUSAIR macro-regional strategy itself is based on international/interregional collaboration. Mapping potential value chains in sectors of blue economy could provide a thematic platform for improved joint international effort by members of ADRION macro-region in tackling EUSAIR proposed goals and targets.

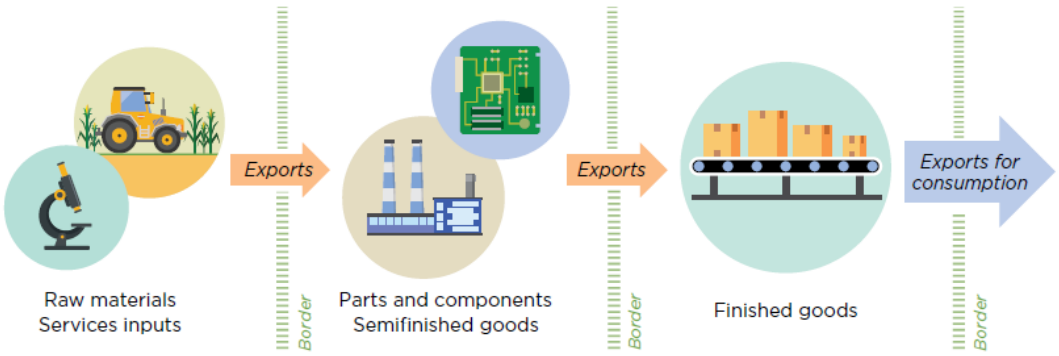
2.1. What is a value chain and what is its purpose?

2.1.1. Defining a value chain

The concept of value chain and consecutive Value Chain Analysis was first presented by Michael E. Porter in 1985 in his famous book "*Competitive Advantage*" [22]. Value chain refers to the range of activities that add value at every single step, going from initial activities in designing, through producing, and finally delivering a quality product to the customer.

Value chains are commonly mistaken with or wrongly perceived as supply chains. **Supply chain** is the interconnection of all the functions that starts from the manufacturing of raw material into the finished product and ends when the product reaches the final customer. It creates a link between the channel partners like suppliers, manufacturers, wholesalers, distributors, retailers, and the customer. Supply chain activities include the transfer of material from one place to another. The major objective of the supply chain is to gain complete customer satisfaction. **Value chain**, on the other hand, is a set of activities that focuses on creating or adding value at every single step in designing, producing and delivering a quality product to the customer. The major objective of the value chain is to gain competitive advantage.

Figure 1. Global Value Chain production process across countries



Source: World Bank

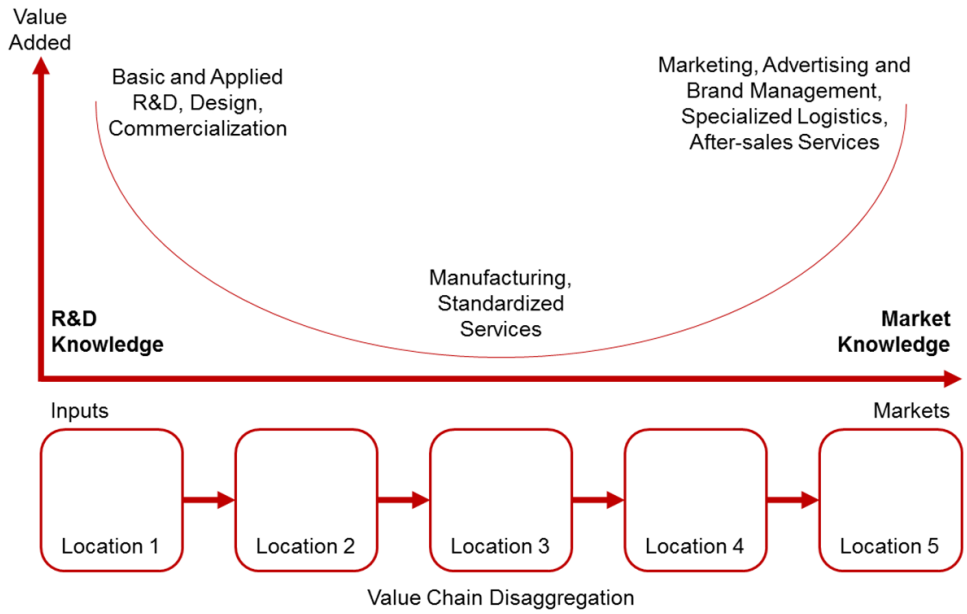
[22] Porter, Michael E. 1980. *Competitive Strategy*. New York: The Free Press

Expanding the initial definition of Value Chain into global perspective, a **global value chain (GVC)** is the series of stages in the production of a product or service for sale to consumers. Each stage adds value, and at least two stages are performed in different countries. By this definition, cited from A World Bank Group Flagship Report "*Trading for Development in the Age of Global Value Chains*"[23] a country, sector, or firm participates in a GVC if it engages in (at least) one stage of a GVC. A global value chain breaks up the production process across countries. Firms specialize in a specific task and do not produce the whole product (Figure 1.).

Activities within the value chains are grouped into several groups depending on production level (pre-production activities, production and post-production). All initial value chain activities up to manufacturing or standardized services activities form so called **upstream** group of activities while all succeeding activities (marketing, specialized logistics, after-sales activities) form **downstream activities**.

Each activity within the value chain has different value-added level (resulting in different margins). Initial activities requiring big **R&D knowledge** and last downstream activities requiring substantial **market knowledge** are considered the biggest holders of value-added activities. Manufacturing activities and standardized services, on the other hand, have lowest value-added levels. This is one of the reasons why manufacturing and standardised services with low value-added levels are located in less developed global locations (Figure 2).

Figure 2. Global Value Chain activities by value added levels



Source: Andreas Wieland, scmresearch.org (2015); based on Mudambi (2008)

2.1.2. Value chain smile curve

The concept of the value chain smile curve refers to a graphical representation of the relative contribution to added value of the different stages of the production process for a product, company or industry – starting

[23] World Bank. 2020. *Trading for Development in the Age of Global Value Chains.* Washington, DC: World Bank.

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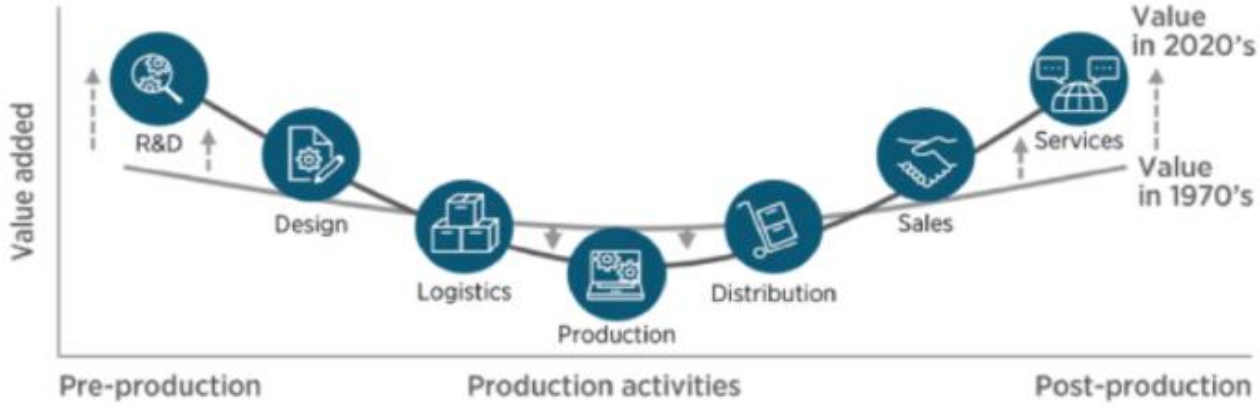
from upstream activities to downstream activities. The concept was proposed in the early 1990s by former CEO of Acer Inc., Stan Shih, who argued that in the personal computing industry starting upstream (R&D) and ending downstream activities of the value chain (sales and services) generate more added value than the final steps (logistics and production). Globalization effects after 1970's have pushed value-added curve even higher, especially on its edges, while central production activities have seen a downgrade in value added levels in 2020's (Figure 3.).

Figure 3. Value chain smile curve



Source: Black Lab Design[24]

The possibility of fragmenting production across borders gives rise to a finer international division of labour and greater gains from specialization. GVCs allow resources to flow to their most productive use, not only across countries and sectors, but also within sectors across stages of production. As a result, GVCs magnify growth, employment, and distributional impacts of standard trade.

A recent World Bank flagship report[25] offers several key findings associated with the global value chains:

- **Global value chains (GVCs) expanded in the 1990s and 2000s, but that expansion has slowed since the financial crisis of 2008.** One reason is lower global economic growth and investment. Another is the lack of major liberalization initiatives in recent years.
- **GVCs matter for development.** GVC trade exhibits two features that distinguish it from traditional trade: hyperspecialization and durable firm-to-firm relationships. These features allow firms to raise productivity and income, rendering GVC trade more powerful than traditional trade in supporting growth and poverty reduction.
- **All countries participate in GVCs but in different ways.** Developed and large emerging countries participate in complex GVCs by producing advanced and innovative manufactures and services. By contrast, many countries in Africa, Central Asia, and Latin America still produce commodities for further processing in other countries or engage in limited manufacturing.
- **The intensification of GVCs was driven by a handful of regions, sectors and firms.** GVCs grew in the machinery, electronics, and transportation sectors and in the regions specializing in those sectors: East Asia, North America, and Western Europe. Within countries, a few large trading firms dominate GVC trade, supported by foreign direct investment.

[24] Black Lab Design. 2021. *Modern Manufacturing And The Smile Curve.* https://blacklab.design/modern-manufacturing-and-the-smile-curve/. Accessed on 18.03.2022.
[25] ibid

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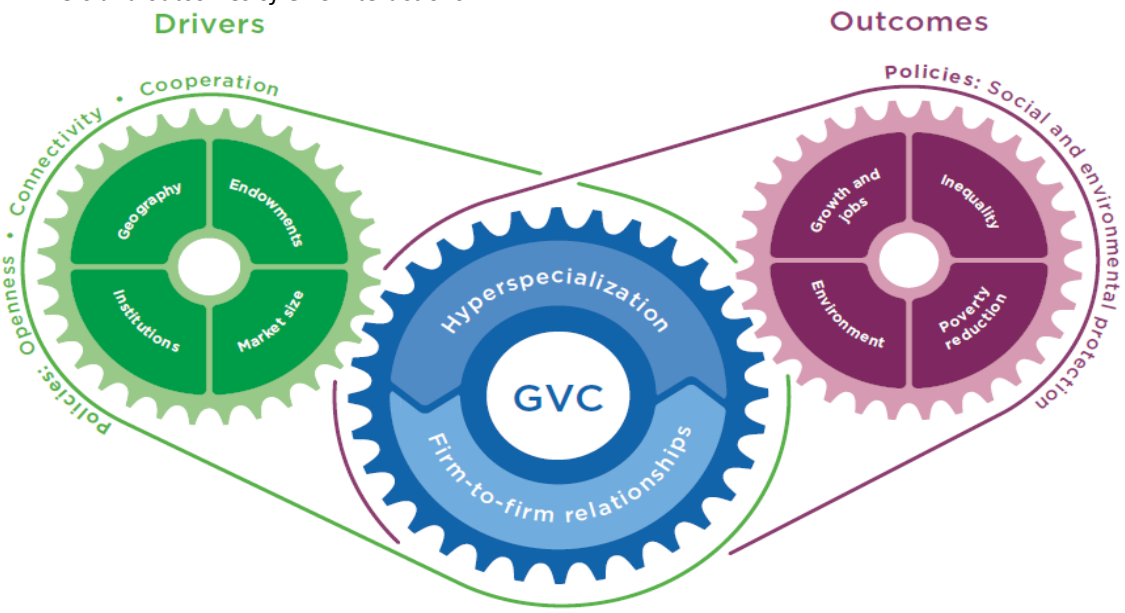
- **More-complex value chains have stronger regional linkages, although GVCs have expanded both globally and regionally.** GVCs in East Asia and Europe are more focused on trade within the region. GVCs in North America depend somewhat more on global partners. Elsewhere, GVC integration has been mostly global and is primarily continuing in that direction.

2.1.3. What are the effects of GVCs?

According to the World Bank flagship report there are important findings regarding various GVC effects on economic growth, employment, poverty and shared prosperity and distribution of gains. Notable effects of GVCs regarding specialization and technology transfers are:

Hyperspecialization and durable **firm-to-firm relationships** promote efficient production and the diffusion of technology, as well as access to capital and inputs along value chains. The result is increased productivity and income growth—more so than what countries achieve through domestic production but also than what they achieve through trade in finished goods (figure 4.).

Figure 4. Drivers and outcomes of GVC interactions



Source: World Bank

Regarding the **hyperspecialization**, firms have a mutual interest in specializing in specific tasks, **exchanging technology**, and learning from each other. Principal firms may **share know-how** and technology with suppliers because such sharing boosts their own productivity and sales, leading to faster catch-up growth across countries. It is important to note that, unlike in "traditional trade" in which firms from different countries compete, GVCs are networks of firms across different countries with common goals, which include minimizing the costs of production or maximizing the profits of the entire production chain they belong to.

Also, GVCs typically involve longer-term **firm-to-firm relationships**. This relational nature of GVCs makes them a particularly powerful driver for **technology transfer** along the value chain.

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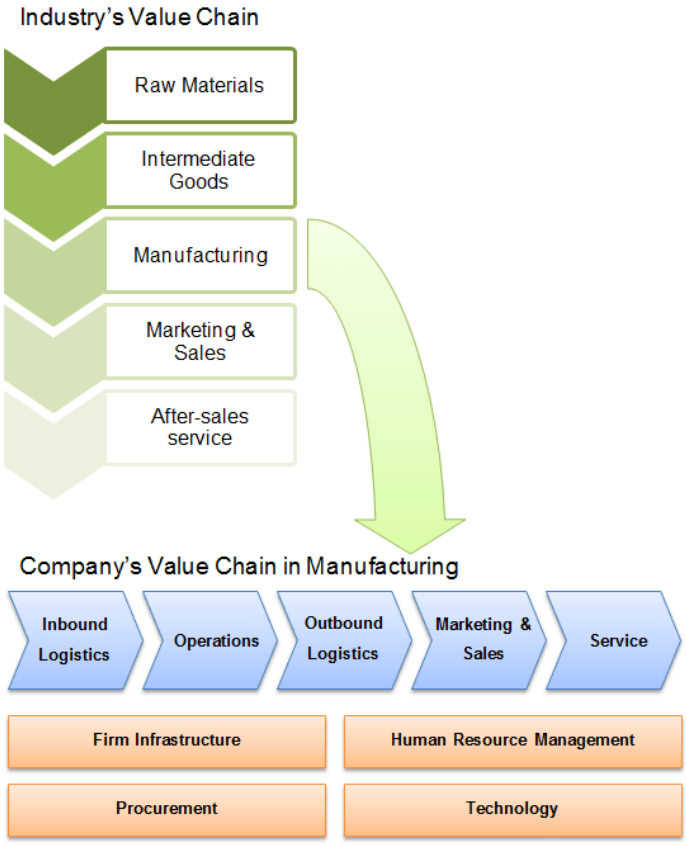
2.1.4. Value Chain Analysis

Value chain analysis is used to evaluate the activities within and around the **organization** and relating to its ability to provide value for money, goods, and services. Along with company point of view, the analysis may be used from the **industry perspective** as well.

Figure 5. Industry's value chain and its relation to a firm level VC



Source: Strategic Management Insight[26]

In Porter's opinion, two major steps involved in the value chain analysis are:

- Identification of individual activities,
- Analyzing the added value in each activity and relating it to firm's competitive strength.

Value chain analysis helps in developing a planning strategy and understanding (potential) sources of company (or industry) competitive advantage by **breaking it into strategically important activities**.

[26] Strategic Management Insight. https://strategicmanagementinsight.com/tools/value-chain-analysis/ Accessed: 24.3.2022

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It also provides a basis for **structuring of activities** to achieve the desired form of competitive advantage. Looking at a company as a set of interrelated value-added activities and positioning them in the context of a wider (global) value chain helps to understand the i**mpact of each activity on cost and potential on revenue**.

As such, value chain analysis can be used to help firms **achieve optimal resource allocation**. It is often used as a basis for making decisions about potential "outsourcing" of activities, as it helps to understand and assess which activities contribute the most to a company's competitive advantage and which do not.

In a globalized economy, activities in each value chain are spread across national and international boundaries rather than being concentrated in a single location. This geographically scattered nature of value chains means that the capacity to appropriate value from a specific industry is determined by which activities are performed rather than the type of industry per se.

For better understanding an example of the value chain analysis is provided in chapter 2.2.4.

2.2. Mapping the value chain

2.2.1. Overview of value chain mapping

Mapping the value chain is all about understanding beyond the traditional areas of focus on supply chain partners by taking a more comprehensive look at the entire product or service chain by creating a map of the structure of the value chain and all entities within it and to identify their linkages and interaction.

Mapping should identify both upstream stakeholders like primary producers and raw materials, intermediate suppliers and service providers, and on the other hand downstream stakeholders like consumers and end of life management. Along with the core value chain activities and linkages, the mapping should also include supporting activities and indirect stakeholders, such as relevant ministries, R&D, supporting business organizations, trade bodies, certification bodies, finance institutions etc.

2.2.2. Sources of information

Value chain mapping should be drawn by two major data collecting approaches containing operational, economic, environmental and social information:

1. **top-down sourcing** - national sector statistical data
2. **bottom-up sourcing** – primary data collected from the value chain stakeholders and other support entities (e.g. NGOs, trade bodies, universities, agencies etc.)

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It is necessary to collect as much information as possible from the value chain stakeholders and other supporting data sources (table 2.) in order to **understand industry functioning** and **relations** between the stakeholders in different parts of the value chain in a form of:

- **structured surveys** (e.g. **EDP surveys**),
- **direct firm interviews** (e.g. reference trips, interviews),
- **fieldwork** and
- **data analysis.**

For the purpose of the project goals, along with the project activity **EDP Tool** and **Pilot EDP** (D.T. 2.2.2. and D.T.2.3.2.) a dedicated module of questions (e.g. Module 9 in Pilot EDP survey) will focus exclusively on identifying information needed for successful mapping and performing value chain analysis of the several Blue Growth related value chains in Adriatic-Ionian region.

Table 2. Value chain, economic and other supporting data sources

Value chain data sources	Economic data sources	Other sources
Ministries UN bodies World bank National Accounts Industry / trade bodies National Statistic bodies Regional Development Banks Investment agencies Annual business reports Procurement data / platforms etc.	Ministries UN Comtrade Enterprise Surveys (World bank) EU-KLEMS Regional Trade Agreements (RTAs) database Trade in Value Added (TiVA) database (OECD) World Development Indicators (WDI) World Input–Output Database (WIOD) WITS database (World bank) etc.	World Economic Outlook (WEO) database of the International Monetary Fund (IMF) World Telecommunication/ICT Indicators database (ITU) Integrated Trade Intelligence Portal (I-TIP) (WTO) Certification bodies Equipment suppliers (e.g. product specifications Conference papers and proceedings Specialist databases Academic and market research studies Media reports etc.

Source: Authors

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2.2.3. Drafting the value chain

First step is drafting the idealized value chain of relevant activities. A draft may be constructed after a thorough literature review and a reference trip to visit *advanced buyers* and service providers already competing in this industry.

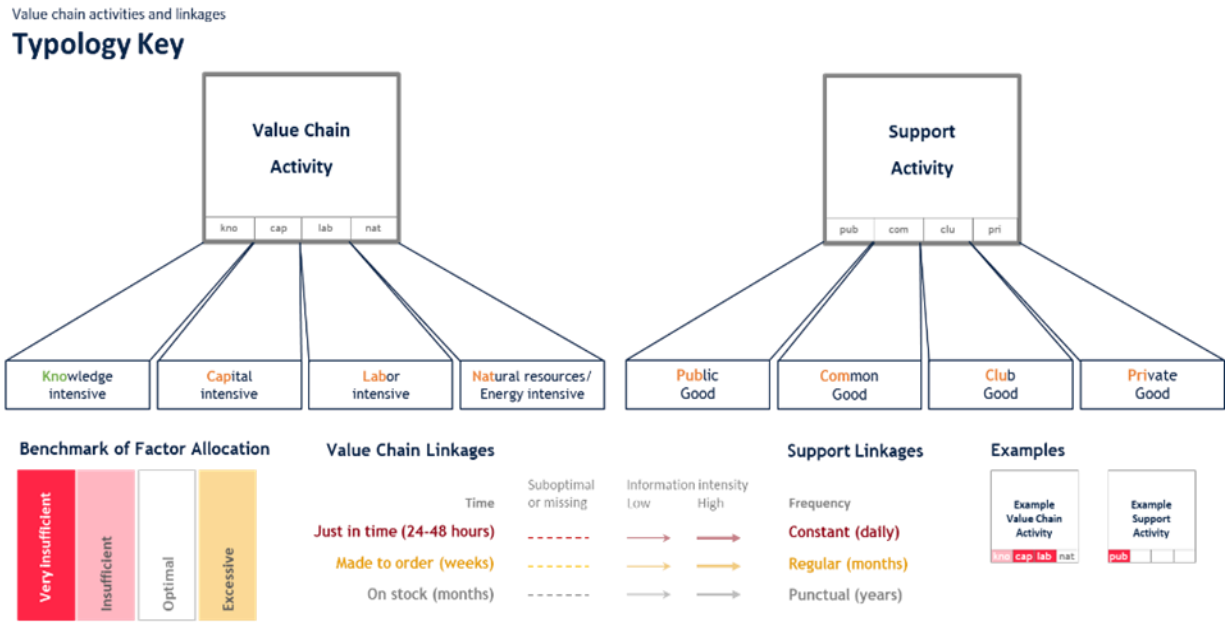
Term "*Advanced buyers*" represents companies, mostly in the downstream parts of the value chain, which set the scope for evolution and innovation in the industry. They are the trendsetters. Understanding *the purchasing criteria* of these buyers helps to determine requirements for competitive participation in the industry in the future.

In the **second step** relevant industry needs to be *benchmarked* against ideal value chain. The benchmarking analysis is taken from a mixture of firm interviews, fieldwork, and data analysis. Where data is not available, expert opinions should be used to assess the benchmarks. The value chains also consider the factor intensities of various sets of activities, namely:

- **Capital Intensity**, as measured by investment cost;
- **Labor Intensity**, as measured by number of staff;
- **Knowledge Intensity**, as measured by years of training; and
- **Natural Resource Intensity**, as measured by input cost.

Together these factor intensities help assess the economy of scale needed for firms to compete in each activity. Moreover, it is important to note the intensity of the linkages between activities (in terms of both time criticality and knowledge flow) and how globally concentrated or rare each activity is. A legend representing the factor activities for an individual activity is given in figure 6.

Figure 6. Typology key for value chain activities and linkages



Source: World Bank

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Value chain benchmarking template is designed for the purpose of value chain (VC) analysis (figure 6.).

The benchmark template consist of two major parts:

- Visualization of core value chain activities and
- Supporting bodies' visualization.

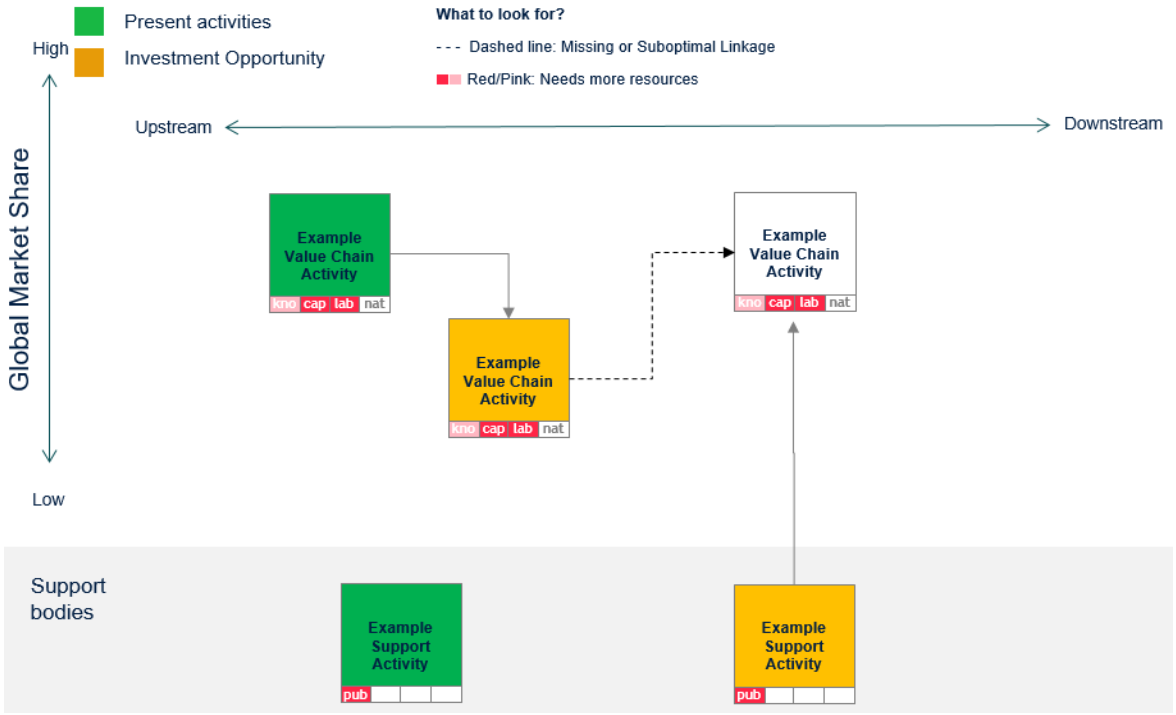
The **core value chain activities** are placed relative to their upstream or downstream position in the value chain (e.g. R&D, design, logistics, production, distribution, sales or services) and depending on their global market share (low or high). Value chain linkages are connecting the activities by marking needed time of interaction (just in time – 24 to 48 hours, made to order - weeks or on stock-months).

Supporting bodies are placed at the bottom, indicating their important supporting role for one or several core activities. If possible, support linkages are placed by frequency between the two (constant, regular, and punctual).

Linkages in the template which are connecting related core or supporting activities are presented by different types of connecting lines (dashed, solid, bolded solid) marking three different states: missing, low or high intensity between the VC activities.

As stated before, each activity has factor intensity indicator in a form of four marked boxes on the bottom of each activity. They represent knowledge, capital, labour and natural resource/energy intensiveness in four grades (very insufficient, insufficient, optimal and excessive). In the supporting VC activities, boxes are representing intensity of four types of goods (public, common, club and private goods).

Figure 7. Value chain benchmark template



Source: Authors

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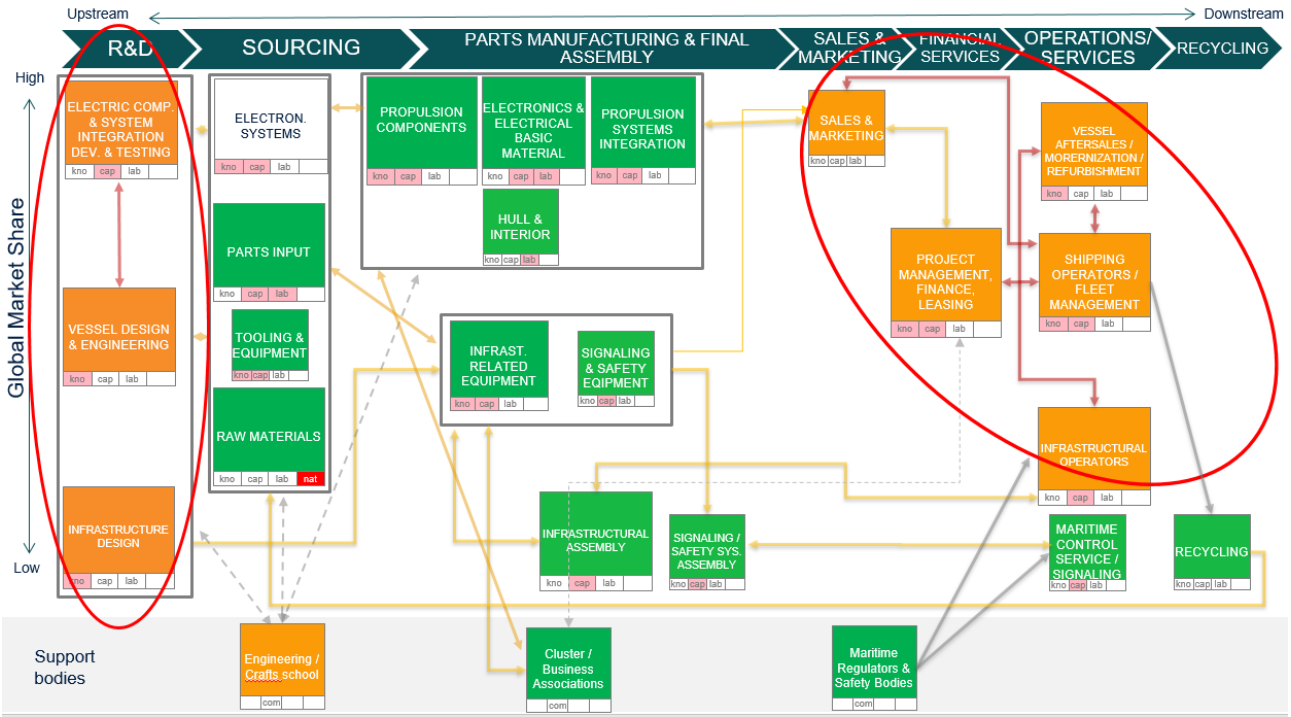
2.2.4. Example case scenario of value chain analysis

In order to understand the process of benchmarking and value chain analysis, an example case scenario is designed. Note that value chain activities and linkages presented in this example are fictional and used only to better understand the process. The case scenario presents generalized *maritime mobility value chain* (figure 8). Such specific industry level VC includes all core and supporting activities related to coastal (short-sea) transport of goods and passengers.

Core VC activities include important activities ranging from initial upstream activities (R&D related vessel design & engineering, infrastructure design and various sourcing activities etc.) to central VC activities such as vessel assembly, infrastructural equipment etc., and downstream activities and operations/services closer to the final customers and end-users.

Figure 8. Value chain benchmark sample of generalized maritime mobility



Source: Authors

Each VC activity in the table is in **relative upstream or downstream position** and also on the lower or higher market share position. Green and amber mark the activities' presence or lack thereof in a specific region/market.

Along with the position, each activity has **factor intensity indicators** which mark insufficient or optimal market intensity. Under each activity, the small boxes indicating factor inputs are marked in pink (if the factor is marginally missing) or red (lacking).

Every activity is connected with a line which describes **information intensity** in optimal or suboptimal level. Where a link is suboptimal or missing, it is marked by a dashed line.

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It is **not necessary for all activities to be present in the region or specific market**. It is important to understand *where and how value is created* within the global value chain to know which activities are worth competing for. Activities within each value chain add a differing proportion of total value to a product and face different competitive pressures. Therefore, 'moving up the value chain' does not necessarily lead to more lucrative opportunities. Usually the activities that are most needed to be geographically proximate are those which necessitate high information exchange or just-in-time activities.

2.2.5. Conclusions drawn from the case scenario

Based on presented case scenario and relevant value chain benchmarking, several conclusions from the analysis can be drawn:

- Initial upstream activities, although present in the market, are identified to be insufficient by knowledge or capital, resulting in creating significant VC gaps (e.g. R&D related vessel design & engineering, infrastructure design).
- Majority of downstream activities in the VC are present but lacking various factors and represent investment possibility for VC upgrade.
- Central VC activities, grouped around manufacturing and assembly are present and in good status with some insufficient factors.
- Supporting bodies and activities are present in the market but some supporting activities are identified to be lacking with suboptimal links to the core VC activities (e.g. engineering & crafts schools). This market gap, if not addressed properly may present bigger disruption in the long run for the entire VC.
- Some VC activities (marked white) are not present in the specific market. It is normal that those activities are not part of regional GVCs and are operated geographically somewhere away. In this case scenario this is the most obvious for electronic systems production.
- Benchmark analysis in general clearly shows gaps in the initial downstream value chain activities (R&D activities) as well as in final upstream activities. Only central VC core activities are in relatively good position with some detected insufficient links. This reveals that country's (or region's) industry central production activities in the value chain are very well organised.
  It is clearly visible that industry has specialised **as low value added** input supplier based on the availability of natural resources and that it does good in relation to manufacturing and assembly activities due to cheap labour.
  In order to upgrade more effort and measures have to be put into lacking upstream and final downstream value chain activities, especially **higher value added activities** such as R&D and sales and marketing, financial services and aftersales services and into upgrading insufficient important supporting activities in the long run.

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