



# BEAT PROJECT

**Governance model for the development of a Blue  
Economy Italian-Croatian transnational cluster**



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## 1. Introduction

The purpose of BEAT Project is to promote a trans-national cluster to sustain the economic development of the Italian and Croatian actors involved in the Blue Economy sectors. The project aims at creating a network of diversified stakeholders to support the collaboration among them, to favor the knowledge creation and exchange and to enhance the firm's competences, as well as the entrepreneurship opportunities at the international level.

The BEAT Project capitalizes the experience, among others, of the "Blue Tech" project, which contributed to the study for the development of a macro regional Cluster in the green shipbuilding technologies sector in the Adriatic-Ionian area. Following the Blue Tech experience, the BEAT Project focused on some relevant activities useful to identify the competitive and technological capabilities and competences of Blue Economy firms and the way they can collaborate. Firstly, the Italian and Croatian industries linked to the Blue Economy were examined through the Global Value Chain (GVC) framework that is particularly relevant for understanding how global industries, such as the Blue Sectors industries are organized. Specifically, focusing on the sequences of value-added activities, on the actors performing them, on the nature of the relationship in place ("governance") and on the dynamics of value capturing ("upgrading") allows having a holistic view of industries.

Secondly, the innovation and technological capabilities of firms engaged in the Blue Value Chain, as well as their collaboration needs, were examined through two surveys. These activities allowed the identification of the enterprises and stakeholders (centres of excellences, policy makers, universities, etc.) operating in the Blue Value Chain and the identification of the sub-set of activities developed in the Macro area, with the purpose to create an Italian-Croatian trans-national cluster for the development of Blue Economy. Moreover, the "Blue Tech" project has mapped on-going cluster experiences in the regions of the project to outline a preliminary proposal concerning the cluster governance model at the trans-national level.

## 2. Cluster definition and models

Several definitions of clusters have been developed during the past years, but the most diffused and accepted by scholars and policy-makers has been formulated by Michael Porter, who defines them as "a geographic concentration of interconnected companies and institutions in a particular field". European Cluster Observatory (2016, p. 11) states: "clusters cannot be understood as fitting into the narrow sectoral view that most industrial policies have, but should be considered as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies. They are defined as groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialised expertise, services, resources, suppliers and skills.

Clusters are referred to both as a concept and a real economic phenomenon, such as the Silicon Valley, the effects of which, such as employment concentration, can be measured – as is done by the cluster mapping of the”. Clusters encompass an array of linked industries and other entities relevant for the cluster’s competition. They include, for example, suppliers of specialized inputs such as components, machinery and services, and providers of specialized infrastructure. Moreover, clusters often extend downstream to channels and customers, and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include governmental and other institutions – such as universities, standard-setting agencies, think tanks, vocational training providers, and trade associations – that provide specialized training, education, information, research and technical support” (Porter, 1998, p. 78).

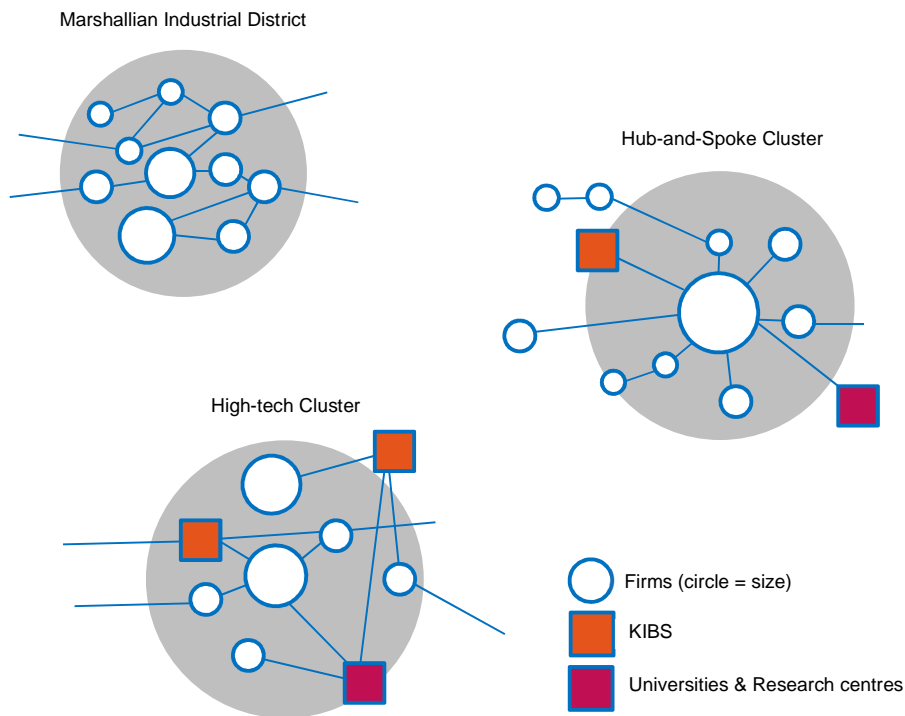
A Cluster model is based on the three main elements: (1) the concentration in a well-defined area, (2) a number of firms and institutions that could be interconnected and (3) the presence of firms specialised in the production of different intermediary or final goods as well as of services and technologies, related to one specific field. It is important to notice that this definition of a cluster considers the co-existence of a set of different actors, firms, service and technology providers, but also institutional actors, operating in the main industry and/or in the related ones, as the main feature to achieve the development and competitive purposes. Specifically, in addition to the firms (small, medium and large-sized) and the public actors, other important actors (key enabling actors – KEA) involved in the cluster activities are the universities and research centres and the knowledge-intensive business services (KIBS) providers, which have an important role in promoting the firm’s (and cluster) innovation and technology advancement.

The cluster model is not a unique framework, but it may have different forms. The classification is based on some cluster features, such as the firm size distribution, the industrial linkages and network within the cluster, the degree of vertical disintegration, the governance structure, the innovative capabilities and the organization of the production. Moreover, other aspects regard the role of the large firms, the way companies were embedded within the cluster’s network, nationally and internationally, the major industries’ development dynamics, the region potential trajectories and the role of the public institutions as policy-makers, producer and consumer at the local/regional and national level and in assuring innovation. Specifically, three types of clusters are considered the most relevant and diffused (Anderson, Evers & Griot, 2013; Markusen, 1996). They are (see Figure 1):

- *Marshallian Industrial Districts*. This model differs from other types of clusters for two main reasons: (a) the geographically circumscribed area is more limited in respect to the other cluster models, and (b) the strong correlation exists between the production domain and the social domain. A community of firms and people share common rules, behaviours,

language, values and that contribute along with the geographical proximity, within a limited territory, to generate relationship with buyers and suppliers (Beccatini, 1990). The Marshallian model is characterized by the predominance of locally owned SMEs that operate in a cooperation–competition (co-opetition) environment, in a specific sector. This peculiar environment reduces transaction costs and fosters knowledge sharing. In this case, the role of the local government in promoting and regulating core industries is strong, instead there is a low cooperation with the KEA.

Figure 1: *Cluster models*



Source: adapted from Püchner et al., 2014.

- *Hub-and-Spoke Clusters.* The main characteristic of this model is the presence of large firms surrounded by smaller companies. The governance of this model of cluster is driven by a large firm or a handful of key firms, which may be located within or outside the cluster, so that the other firms are mostly working as sub-suppliers of them. There is a high degree of public involvement in providing the needed infrastructure and other business incentives. Moreover, the large firms have frequent relationships with universities, research centres and KIBS. This type of cluster is often used “as a way of stimulating regional development in outlying areas and simultaneously lowering the cost of business for competitively squeezed firms bristling under relatively high urban wages, rents, and taxation” (Markusen, 1996, p.304).
- *High-tech Clusters.* This model emerges in technological innovative sectors, with a vaster area in respect to the other ones and is characterized by significant interactions between firms and research centres in addition to other distinctive elements, such as the presence of knowledge-intensive business services(KIBS) that collaborate and interact with cluster companies and large enterprises that invest in R&D. Moreover, they underline the necessity for the cluster firms to possess the adequate absorptive capacity, necessary to understand and apply the codified knowledge. Such cluster models resemble the concept of ‘regional innovation system’ (RIS) introduced in the middle of the 90s by Cooke and Morgan (1994) to describe the highly innovative capability of the Baden-Württemberg region. The authors identified three key characteristics, namely dynamic networks between firms, a rich institutional system and science and technology infrastructure (public and private) that are supportive of the highly innovative performance of the firms based in the region.

The three cluster models described above are not mutually exclusive but indicative as new forms could result based on new trajectories, both technological and institutional. Indeed, the creation of a trans-national cluster in the Blue Economy, with a focus on the shipbuilding industry, as result of the BEAT Project is seen as a mix of High-tech (principally) and Hub-and-Spoke Clusters, as there is an important role of the larger (Italian and Croatian) firms associated to the key role of (Italian and Croatian) KEA. The latter are strategically essential for the cluster development and growth as they promote the relationships (inside the national boundaries as well as at transnational level) among the different members and foster the innovation processes, through knowledge creation and sharing processes with regard to the organizational and technological advances. These considerations emerge from the survey on the innovation and collaboration needs of Italian and Croatian firms operating in the Blue Value Chain. In particular, the trans-national cluster model emerging for the BEAT Project has the features of the recent *innovation cluster* concept, intended as intersection hubs for research paths converging on complex products. As clearly identified and targeted in the European

Union policies, innovation clusters are acting in a perspective of open innovation criteria implementation, supporting diffusion of new business models in industrial field chains (primary importance to SMEs) related to specific territories or beyond them (in terms of macro-regions). The European Commission believes in innovation cluster's role intended as territorial actors able to play a primary role in the field of regional smart specialization strategies (S3) for the implementation of Innovation Union Initiative and strengthening SMEs connections and networks.

Considering the complexity and inter-sectorial character of economies, such as the Blue Economy, it is clear that the cluster willing to grow depends not only from the relevant knowledge within the cluster boundaries, but also from the complementary competences that may introduce innovations from outside the cluster boundaries. In this regard, the BEAT Project aiming to the creation of a trans-national cluster in the Blue Economy and specifically in the shipbuilding industry may benefit from other cluster organizations. The Blue Tech Project already mapped some interesting cluster initiatives (as illustrated in the Table 1 and detailed in the Report 3.1.1 of the Project) useful for the BEAT Project's purposes.

Table 1: Clusters mapped in the Blue Tech Project useful for the BEAT Project

Name of the cluster	Country/Region	Reference industry
Maritime Technology Cluster FVG	Friuli Venezia Giulia – Italy	Maritime technologies
NAVTEC	Sicily – Italy	Maritime Transport and Maritime Technologies
Apulia Nautical District	Apulia – Italy	Nautical
Jadranski pomorski klaster	Croatia	Shipbuilding
MarC	Croatia	Maritime sector
Cluster “Arredo e Sistema Casa”	Friuli Venezia Giulia – Italy	Furniture and home system
CBM - Cluster Smart Health	Friuli Venezia Giulia – Italy	Smart health
COMET	Friuli Venezia Giulia – Italy	Components and thermoelectromechanics
DITEDI	Friuli Venezia Giulia – Italy	Information and communication technologies
Legno Arredo del Trevigiano	Veneto – Italy	Wood furniture
Cluster Marche Manufacturing	Marche – Italy	Manufacturing



Cluster of plastic and tool	Federation Bosnia and Hercegovina – BiH	Plastic and tool
Klaster DRVO	Republika Srpska – BiH	Wood processing and furniture
National Technology Cluster – Cluster Trasporti Italia 2020	Italy	Transport Technologies

Source: Blue Tech Adrion Cluster – Report C

In the Blue Tech Project, the key role of collaboration among the Croatian cluster “MarC” and the “Maritime Technology Cluster FVG” for the support the inter-cluster relationships has been highlighted. In a strategy perspective, the Cluster Management Organization (CMO) should take into consideration the development of relationships with these other clusters. The creation of a CMO is essential and instrumental in order to support the development of a cluster as from it depends the Governance of the Cluster.

### 3. CMO and governance model for a trans-national Blue Economy Cluster

The creation of a Cluster is a slow process characterized, as before mentioned, by converging aims among actors of an ecosystem that is achieving consciousness regarding the benefits of the aggregation actions and policy makers identifying, in an aggregate system, reference actors that could play as intermediates to promote relations in terms of industrial and research policies. The establishment of a Cluster may follow a top-down or a bottom-up approach, which differ for the actors taking the leader role. In the top-down process, the decision to create the cluster organization depends upon some regional or national authorities and policy makers with precise objectives, such as improving the internationalization process or the innovation and the economical capabilities of the local entities, in addition to the support role for the development of the local economy. In a bottom-up approach, the cluster is rather created spontaneously, as a large number of firms specialized in the production of different intermediary or final goods, services or technologies, all related to one category of products within a rather delimited area, recognize the presence of common interests and decide to collaborate for a common goal. Sometimes a cluster is the result of a combination of both, the top-down and bottom-up approaches.

The origin of a Cluster also has an impact on the presence and characteristics of the Cluster Management Organization (CMO). According to cluster governance review carried out within the “Blue Tech” project, it is useful to take into consideration a trans-national cluster form of governance that takes into account the experience of two concrete examples representing the main references in this sense: the *Waterborne European Technology Platform* and the





*National Technology Cluster Trasporti Italia 2020*. As stated in the Blue Tech report (report D) “In terms of governance, both entities rely on a *steering committee* with a primary representation of industrial side alongside with administration (national in the European platform and regional in the Italian CTN) and scientific representatives. In both cases, the core actions for the involvement of the associates are the thematic working groups. In this field, all the associates interested in developing a specific topic participate to define common positions, debate on technologies and develop potential projects. If considering the convergence of all transport systems together with the Intelligent Transport Systems in the national Italian cluster, we can find a tailored Scientific Committee balancing request from different sectors”. As suggested in the analysis of the Blue Tech, within the Adriatic-Ionian macro region and specifically as far as the Italian-Croatian transnational cluster, the characteristics of the institutions potentially involved suggest orienting the development of a form of governance bringing together the relevant stakeholders and involving the more structured regional clusters. The latter could support the operational secretariat role within an open process of engagement to be organized among all the partners of the new-born trans-national cluster.

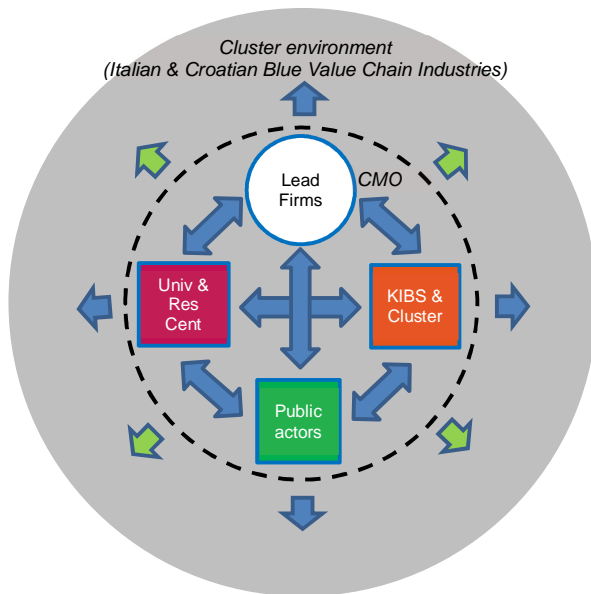
For the BEAT Project, the suggested form of governance should include a coordinator identified by the parties involved in the cluster, the parties as well as external experts representing different stakeholders that can support with their expertise the cluster over time. As reported in the Figure 2, it is desirable to have a high variety of actors in the CMO structure, in order to guarantee different services and activities for the cluster growth. In this regard, for an effective development of cluster, the CMO should be composed by the co-presence of some of the following actors:




- leading firms (of the main industries of the Blue Value Chain and belonging to different countries),
- KIBS,
- local cluster organizations,
- public organizations, such as Development agency, Chamber of Commerce or other public institutions,
- and University or Research Centre.

In this regard the private-public composition of the CMO and of *governance model* should assure the necessary skills and competences to support the collaboration as well as the innovation processes among all the cluster members in a two double-side model:

- among the cluster members of the same country (Italy or Croatia),
- among the cluster members of the two countries (Italy and Croatia).

Figure 2: CMO structure for the trans-national cluster in the Blue Economy



-  Activation and promotion of new-knowledge and innovation processes
-  Diffusion of new-knowledge and activation of innovation processes among cluster members
-  Promotion of collaboration among cluster members

All Parties of CMO have to guarantee the scope of cooperation. In the early stage of the Cluster development, the most appropriate model of governance of CMO appears to be the one-year alternation of the principal actors at the head of CMO, in order to assure the right diversification of activities and policy actions.

For the innovation cluster platform, structures and aggregations are organized to enhance innovation activities through promotion, sharing of structures, exchange of competences and knowledge and contributing to transfer of competences, network creation, diffusion of information and collaboration among enterprises and other cluster's players (all these activities could be identified as: animation of the territory).

The success of a Cluster depends on achieving of the pre-defined goals and, in these terms, policy actions should take into consideration the following aspects:

1. Focusing on results that presuppose the existence of shared objectives confirmed by the cluster members, on which the strategic planning, implementation and evaluation become essential for a good performance of clusters and cluster initiatives.
2. The collaboration between the different industries should be done in a smart way, which means building the competitiveness on local strengths and seeking complementarity combinations in cross-regional alliances. Clusters should be implemented in the most relevant industry (in terms of local development and growth potentialities) of the value chain, with the support of other actors – within the cluster or through relevant networks – to enable knowledge-intensive and technology-intensive service providing.
3. A cluster-based approach should offer new cluster services and training, essential to compete in the national and international markets. This entrepreneurial mind-set is an essential part of the cluster management organization (CMO).
4. The cross-border collaborations are a fruitful way to gain new market opportunities, especially when local clusters are already present.
5. Linking the value chain activities through cross-national cooperation in order to enhance the competence and the business opportunities of local industries. In this way new value chain activities should be developed.
6. Involving end-users (demand side) in the different level of value chain is important in the early stages, in order to bring together various types of innovators and favour the cluster innovation processes.
7. Supporting the competitiveness of small and medium-sized enterprises (SMEs) and stimulating research and innovation activities involving SMEs as part of the value chain collaboration and through specific actions aimed at SMEs. In particular, open innovation models along the value chain can further promote the collaboration between large industry and SMEs. Supporting the development of open-access pilot line and foundry services that provides SME access to manufacturing capabilities. For SMEs, the presence of cluster organisations represents a chance to get involved organically in the innovation transfer and sharing.

Specifically, regarding the BEAT Project, parties of CMO should support the implementation of the following key activities:

- sharing of initiatives and activities linked to the Blue Sectors and innovation relying on information sources at regional and national level;
- public meetings bridging production and technology chains;
- project related events and institutional and policy activities;
- designing joint events or side events of common interest for both the territories involved;



- promoting and supporting technology transfer activities to enhance business and innovation competitiveness of the Blue Economy and related value chain;
- sustaining internationalization through sharing of information on mutual fairs organized by aggregation and business-related players;
- stimulating the participation of enterprises to any matchmaking event;
- support joint development of European projects and sharing of mutual portfolio on enterprises involved in the network.

Cooperation activities performed should be based on the principle of equality, mutual benefit and win-win collaboration. Parties commit themselves to give priority and communication in mutual involvement in any activity, project or initiative linked to the targeted territories and the reference topics of the BEAT project.



## References

- Anderson, S., Evers, N. and Griot, C. (2013). Local and international networks in small firms internationalization: Cases from Rhône-Alpes mediact technology regional cluster. *Entrepreneurship & Regional Development*, 25(9-10): 867-888.
- Blue tech project (2016) *Proposal for a cluster governance model in the Adriatic Ionian macroregion (Activity 3.4)*, Report D
- Cooke, P. and Morgan, K. (1994). The regional innovation system in Baden-Württemberg. *International Journal of Technology Management*, 9(3-4): 394-429.
- European Cluster Observatory (2016). *Smart Guide to Cluster Policy*. Guidebook Series. How to support SME Policy from Structural Funds. European Union.
- Markusen, A. (1996). Sticky places in slippery space: A typology of industrial districts. *Economic Geography*, 72(3): 293-313.
- Porter M.E. (1998). Clusters and the new economics of competition. *Harvard Business Review*, 76(6): 77-90.
- Püchner, P., Fritz, N.M.A., Neubauer, V.M.A., Reiss-Schmidt, C., Schauer, B., Bonaldo, A., Fuser, H., Grandinetti, R. and De Marchi, V. (2014). *New cluster concepts for Central Europe and beyond. Activating the role of clusters in view of emerging industries and cross-sector themes*. Offizin Scheufele Druck and Medien GmbH and Co.KG., Stuttgart, Germany.

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