

## **6. CONCLUSIONS AND RECOMMENDATIONS**

### **6.1. SA INNOVATION LANDSCAPE WORKSHOP**

This paragraph will be completed once a workshop on the SA INNOVATION LANDSCAPE WORKSHOP within the context of this Report has been held.

### **6.2. COMPARATIVE PERSPECTIVES IN SA-EU**

#### **Balanced scorecard of Innovation**

Innovation Framework conditions in a comparative perspective could adequately be analysed only if appropriate measures are assessed into a strategic perspective able to set in advance a vision and strategy based on reciprocity. The current instruments (Innovation Union Scoreboard<sup>94</sup>) practically limit the exercise by simply showing current and past innovation trends without linking those to operational Innovation strategies.

Our proposed exercise aims in practical terms at formulating standardised schemes to capture both public and private contribution across different performance dimensions. To this aim scoring innovation in certain fields of mutual interests in international cooperation could pave a better the way towards new dedicated instruments.

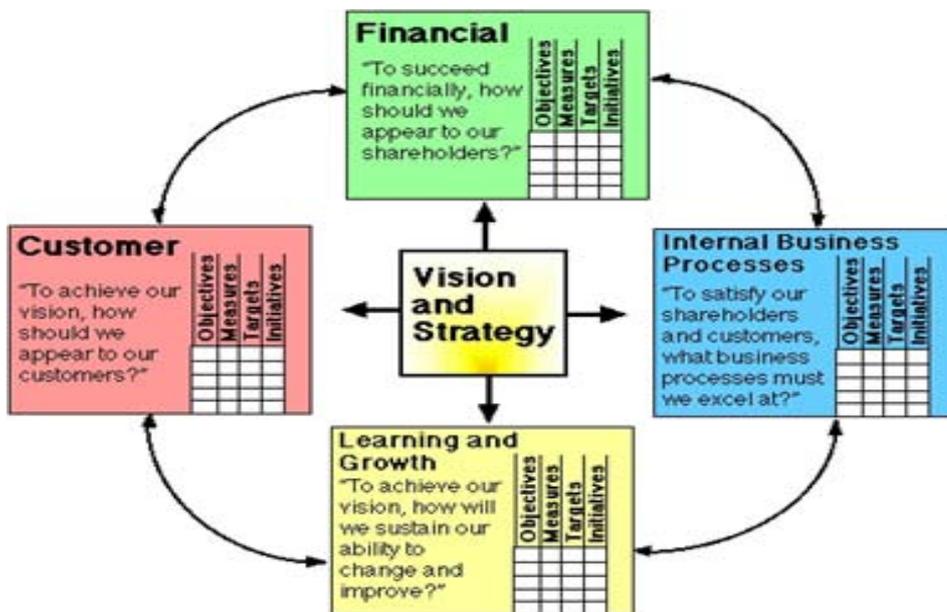
#### **A. The concept of balanced score card**

Balanced score card is a strategy performance and management tool developed in the early 1990s at the Harvard Business School by Robert Kaplan and David Norton. The key problem that Kaplan and Norton identified in the business of the day was that many companies tended to manage their businesses based solely on financial measures. While that may have worked well in the past, the pace of business in today's world requires more comprehensive measures. It's like driving a car by looking in the review mirror. The balanced score therefore includes four main performance dimensions: customer, financial, internal process, learning and growth.

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<http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/innovation-scoreboard/>



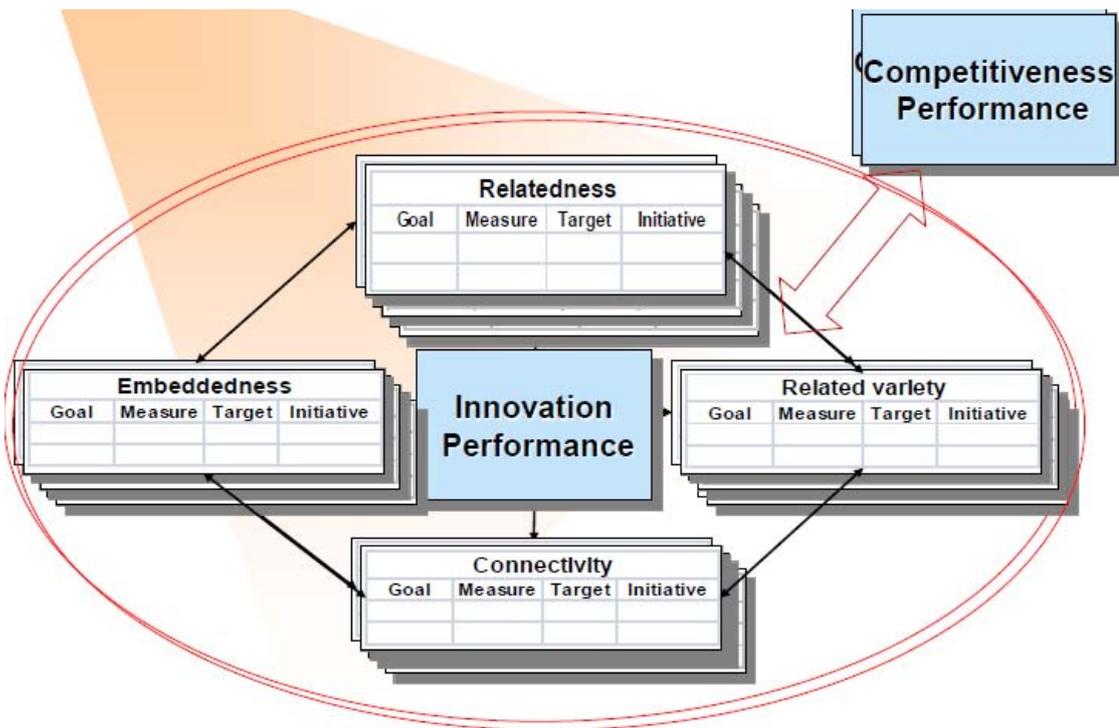
A similar context is likely to arise when looking at multiple innovation dimensions that do not merely focus on standard parameters (e.g., enablers of innovation, output of innovation). At EU level, the current monitoring system “i.e., Innovation Union Scoreboard” represents a good tool to promote a structured framework to compare innovation performance across EU countries. However, it must be accepted that this tool, represents one of several others used by the Global Innovation Index, the World Bank Knowledge Economy Index. As such this Innovation Union Scoreboard” as a tool cannot be simply transposed to measuring innovation performance when dealing non-EU countries. The developmental and strategic contexts of the various countries should be taken into account when this exercise is undertaken.

## B. The aim

Transferring and readapting the balanced score card methodology into an R&I performance framework, might be one additional approach to benchmarking innovation in the EU and SA. In so doing, it will be important adapt appropriate elements from other measurement tools, including the GII, World Bank Knowledge Economy Index and the UNCTAD innovation performance measurement indices.

The approach would look beyond the usual traditional indicators. It is proposed instead to investigate systemic and horizontal performance dimensions which might for instance consist of categories such as: relatedness, embeddedness, connectivity, related variety.

As a follow up, these categories could be constructed upon competitiveness measures/indicators, and developmental imperatives, supporting the formulation of specific innovation cooperation programmes.



### 6.3. ANALYSIS OF POTENTIAL BARRIERS TO SA-EU INNOVATION COOPERATION

#### Trade of innovation: the role of DG Trade and related institutions in SA

##### Objectives

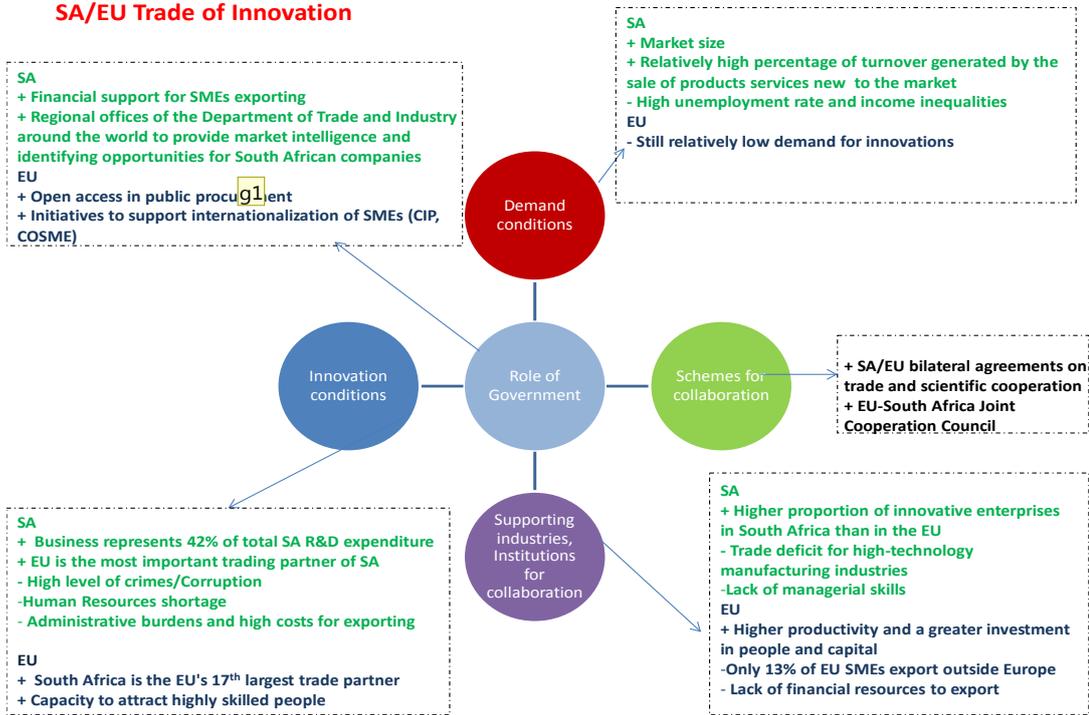
A study launched by the European Commission showed that **26% of internationally active SMEs introduced products or services that were new for their sector in their country against 8% for other SMEs**<sup>95</sup>. Moreover, according to a study published by Pro-Inno Europe, innovative businesses, because they are more productive and therefore more competitive at a global level, are more likely to export. **Internationalization and innovation are therefore complementary strategies that result in higher export shares, turnover and employment growth at the firm level.**<sup>96</sup>

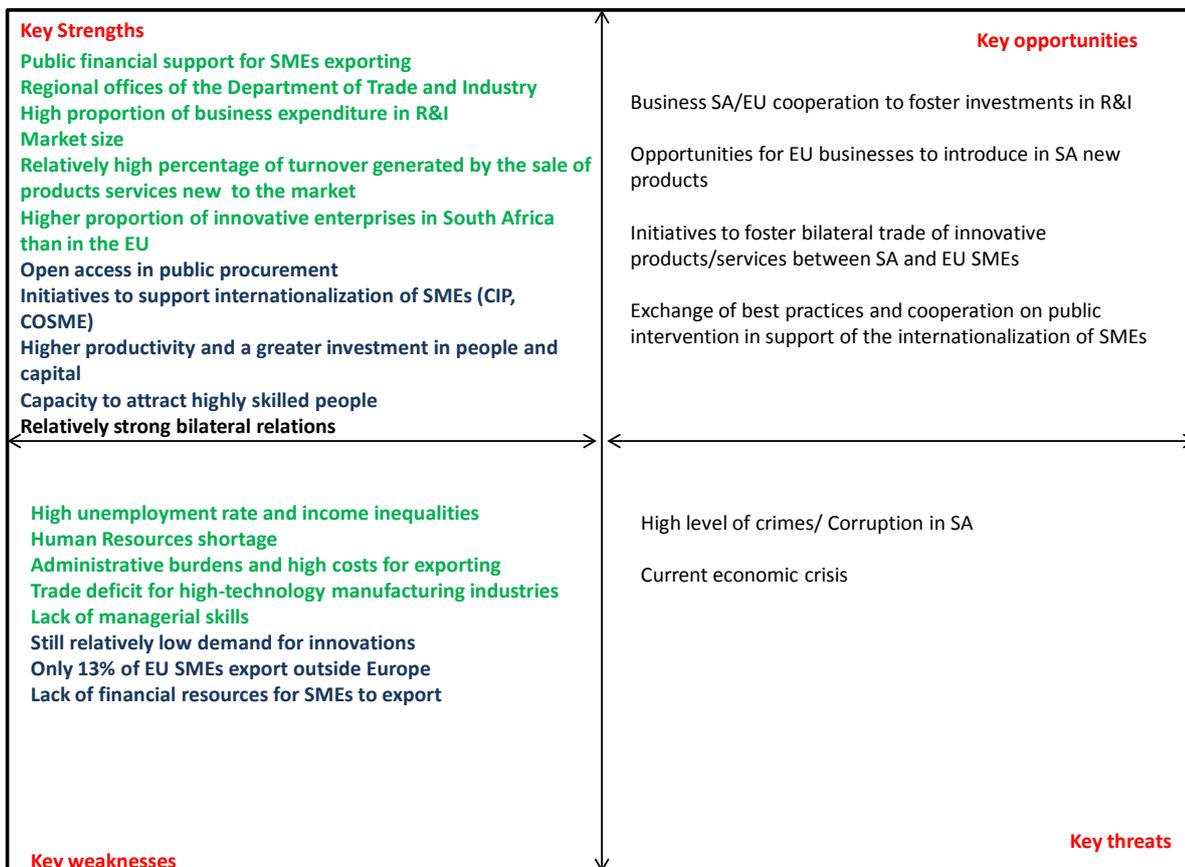
Against this background, this section set an overview of **potential barriers and enablers** that may affect trade of innovation between South Africa and the European Union. In particular, this section will aim at providing insight into opportunities for increased cross-border innovative business cooperation.

95 European Commission (2010), Internationalisation of European SMEs – Final report, p.47

96 Pro-Inno Europe (2010), "Barriers to internationalisation and growth of EU's innovative", Analysis of innovation drivers and barriers in support of better policies, Economic and Market Intelligence on Innovation, p.25

## SA/EU Trade of Innovation





### Potential barriers to trade and investment between SA and EU

- Internal and External barriers to internationalisation: SMEs specific issues

Because of the globalization process and dismantling of international trade barriers, SMEs have been presented with new market opportunities. A study launched in 2009 by the European Commission on the internationalization of European SMEs showed that 25% of EU SMEs are engaged in exporting activities. However, international activities are mostly geared towards other countries inside the internal market and **only about 13% of EU SMEs are active in markets outside the EU<sup>97</sup>. The fact that the majority of European SMEs does not export shows that there are still various internal and external barriers to a greater internationalisation of their activities.** A distinction is made between internal barriers related to the organization and resources of the firm and external barriers related to the business environment that a SME operates in.

In a report published in 2009, the OECD examined the main barriers to greater internationalisation as

97 European Commission (2010), Internationalisation of European SMEs – Final report, p.6

reported by SMEs in European and non-European countries, including South Africa<sup>98</sup>.

According to this study, the most important **internal barriers** to internationalisation for SMEs include:

- High costs of internationalization and shortages of working capital to finance exports
- Limited access to information to locate/analyse markets
- The inability to contact potential overseas customers (e.g. difficulties in finding an appropriate foreign market partner or of gaining access to an adequate distribution channel in foreign markets)
- Lack of managerial time, skills and knowledge
- In terms of external barriers<sup>99</sup>, SMEs are affected by:
- Lack of adequate information on foreign markets
- Costs or difficult paper work for transport
- Other laws and regulations in foreign countries
- Tariffs or other trade barriers
- Cultural differences (incl. business culture)

Figure 2 shows that external barriers are perceived differently depending on the target markets/partner countries. In particular, regarding African partners, main perceived barriers are paperwork, time, costs and business practices



Figure 2: Summary on perceived external trade barriers

98 OECD (2009), "Top Barriers and Drivers to SME Internationalisation", Report by the OECD Working Party on SMEs and Entrepreneurship, p.9-10  
99 European Commission (2010), Internationalisation of European SMEs – Final report, p.59

Source: Pro-Inno Europe, illustration by Fraunhofer ISI, 2010

#### A. State-of-art of Trade and Innovation in South Africa

The recent G20 innovation report elaborated by OECD in 2016, highlighted how South Africa has progressively shifted away from dependence on primary resource production and commodity- based industries to open up to international trade and build capacity in some knowledge-intensive industries<sup>100</sup>.

Several plans have been implemented providing a general strategy to the country towards a diversified economy. In particular, the Ten-Year Innovation Plan (2008-18) identified five areas of competitiveness to be developed: bioeconomy (formerly pharmaceuticals), space, energy security, global change including climate change, and social and human dynamics). In addition, the current National Development Plan (NDP), A vision for 2030 (2011-30), provides a strong focus both on innovation and on the added value of the human capital.

According to the study, South Africa presents strengths able to reinforce an innovative environment such as :

- Active participation in international knowledge networks, R&D programmes, bilateral and multilateral agreements
- Attractiveness as a location for biotechnology companies (ex. Cape Health Technology Park for health related research, Biosciences Park as incubator for innovative biotechnology start-ups).

In terms of weaknesses, the study underlines two bottlenecks affecting South Africa's socio-economic development such as :

tertiary-level education extremely low

- few R&D input and innovation output

#### B. Role of European Commission in fostering trade of innovation between SA and EU

- DG Trade and bilateral agreements

South Africa is the EU's 13th largest trade partner, while the EU accounts for a third of South Africa's trade balance<sup>101</sup>. One of the main pillar of EU-South Africa trade cooperation is the "Trade, development and cooperation agreement", signed in October 1999 and which entered fully into force on 1st May 2004. Thanks to this agreement, 90% of bilateral trade between the EU and South Africa. is now subject to preferential rates. Trade in goods between the two partners has increased by more than 120% and Foreign Direct

100 G20 INNOVATION REPORT 2016, <https://www.oecd.org/china/G20-innovation-report-2016.pdf>  
101 [http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\\_113447.pdf](http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113447.pdf)

Investment has grown five-fold<sup>102</sup>.

Moreover, scientific and technological cooperation is the subject of a separate agreement signed in 1997. The commitment of EU and South Africa to fostering stronger bilateral cooperation, including in the field of innovation, has been reaffirmed in 2007 in the sole Strategic Partnership concluded by the EU with an African country.

- Access to public procurements

**Public procurement of innovative products and services as well as pre-commercial procurements** are key assets to drive innovation and at the same time to encourage cross-border competition and achieve best-value for money for public authorities. Therefore, and to make the better use of the potential of public procurement in this field, the European Commission launched a process of modernization of EU public procurement policy launched by the European Commission in 2011<sup>103</sup>.

As part of this process, the Commission adopted in March 2012 its **proposal for a regulation establishing rules on the access of third-country goods and services to the European Union's internal market in public procurement**<sup>104</sup>. This proposal aims at helping open worldwide public procurement markets and to ensure all businesses (both European and non-European) have fair access to them.

- Support to the internationalisation of SMEs

At EU level, the **Market Access Partnership (MAP)** was launched in 2007 by the European Commission in coordination with Member States to achieve the goals of a better international market access of European firms. The central goal of the MAP is to consult with European businesses established in partner countries. These local Market Access Teams, bringing together the partners based in the third country concerned, provide local expertise that makes trade barriers easier to identify and to address. One of these local Market Access Teams was established in South Africa.

The **Enterprise Europe Network (EEN)**, also supported by the European Commission, provides support for SME internationalisation. The **missions for growth**, organized in the framework of the EEN and coordinated by the DG Enterprise, provide SMEs with opportunities to visit fast growing and emerging markets and to meet and discuss business opportunities with major companies and entrepreneurs in these markets.<sup>105</sup>

Eventually, the European Commission also intervenes on this topic with initiatives supported under the **Competitiveness and Innovation Programme (CIP)**, as the organization of **matchmaking events** to support cluster organisations and their SMEs members in their efforts to develop partnerships and business cooperation on global markets. The CIP successor for the period 2014-2020, the **Programme for the Competitiveness of enterprises and SMEs (COSME)** will enhance this support. The proposal of the

102 <http://ec.europa.eu/trade/policy/countries-and-regions/countries/south-africa/>

103 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0015:FIN:EN:PDF>

104 COM(2012) 124 final [http://ec.europa.eu/internal\\_market/publicprocurement/docs/international\\_access/COM2012\\_124\\_en.pdf](http://ec.europa.eu/internal_market/publicprocurement/docs/international_access/COM2012_124_en.pdf)

105 <http://een.ec.europa.eu/>

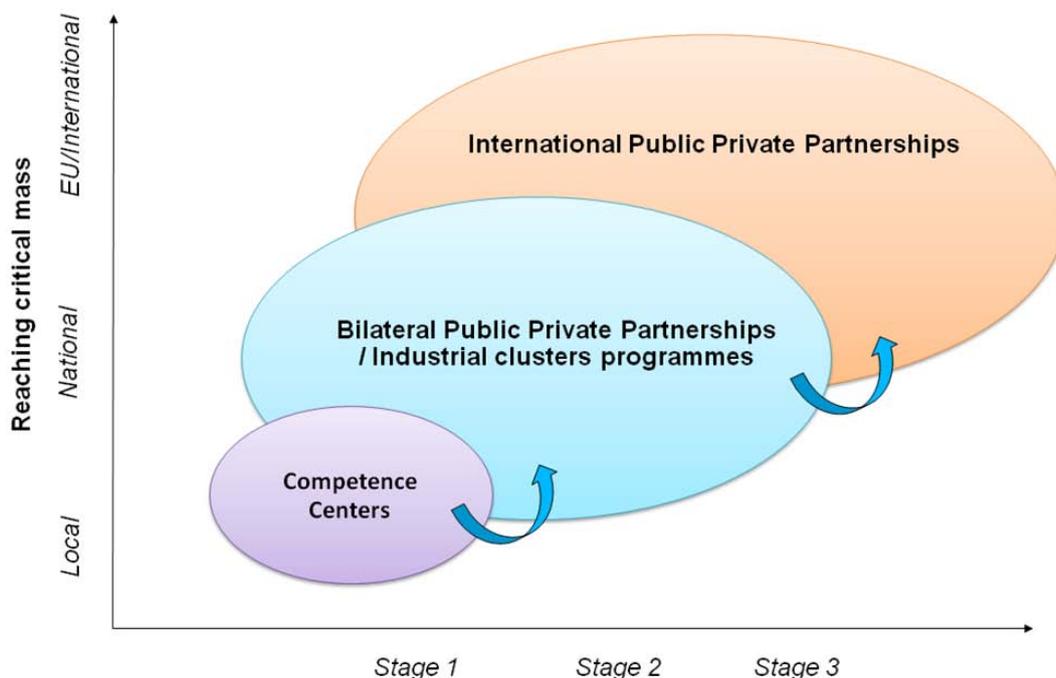
Commission establishing COSME states that one of the programme main objectives and key activities will be to support the internationalisation of SMEs and improve their access to market.

In South Africa, the Department of Trade & Industry is principally responsible for promoting trade and investment with foreign partners, including the EU. Through the DTI, the government provides financial support for exporting SMEs through, for instance, the Export Credit Finance Guarantee Scheme, the Export Marketing and Investment Assistance (EMIA) scheme that helps exporters involved in developing export markets, including market research, trade missions, and international exhibitions. The Department of Trade and Industry operates regional offices around the world, providing market intelligence and identifying opportunities for South African companies.

#### 6.4. DISCUSSING OPERATIONAL RECOMMENDATIONS

This section aims at providing practical insight into existing public/private cooperation schemes at local, national and European level and that could be scaled up at international level. Specific attention will be dedicated to the role of private-public cooperation schemes.

The following chart provides a three-step model supporting the development of innovation based “Competence centres<sup>106</sup>” and their scaling up through international cooperation schemes.



Typically a Competence Centre has two main goals:

106 Initiatives focused on scientific and technological excellence to drive industrial skills through direct business involvement.

- Become a productive, academic Centre of Excellence by actively involving a number of companies and research groups in joint multidisciplinary research
- Promote the introduction and implementation of new technology and strengthen technical competence in industry, mainly through its industrial partners via:
  - 1) Strong and innovative academic research environments with researchers from different disciplines collaborating with a network of companies.
  - 2) Research focused on problems that offer new and exciting challenges for scientists, of strategic importance for the companies involved.
  - 3) Industrial involvement in the centers means that new ideas and knowledge are implemented and used by the companies.

### **ERANET vs ERA-REGIO-NET**

The discussion surrounding the identification of useful mechanisms to promote cooperation and alignment between EU R&I programmes has recently come to a standstill. The EU has strongly endorsed the emerging Smart Specialisation flagship priorities<sup>107</sup>. Further activities are expected to be shaped in a renewed fashion and with a medium-long term perspective:

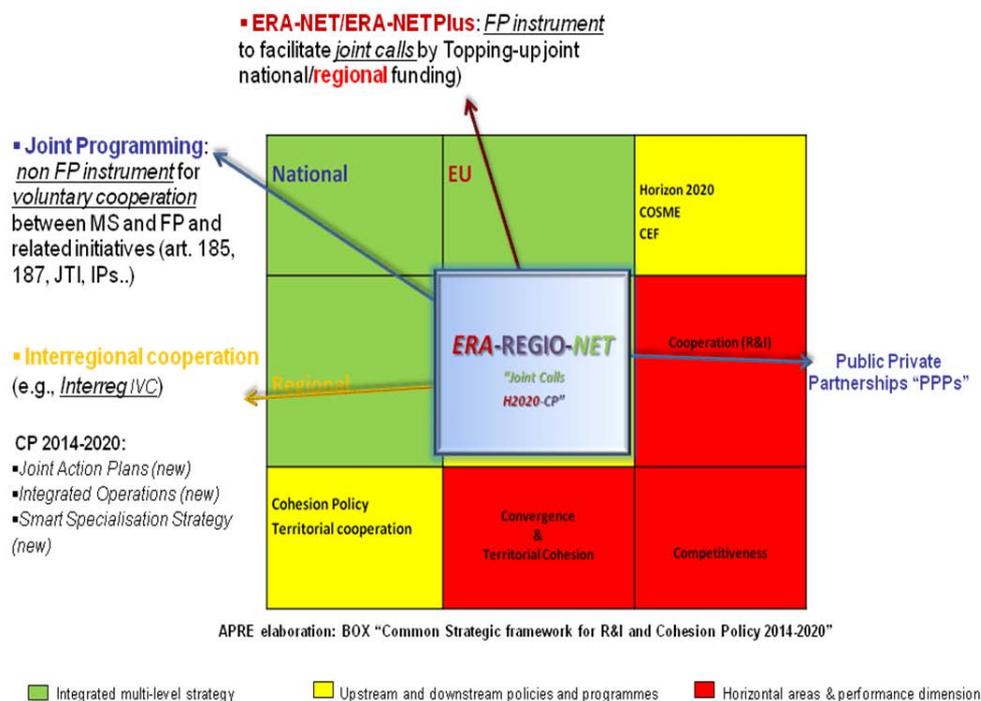
#### World class clusters

1. Joint Programming Initiatives - New ERANET
2. Smart Specialisation Strategy (*Clustering SSS3*)
3. Public Procurement We briefly introduce and discuss a potential approach<sup>108</sup> to align funding programmes onto a comprehensive framework.

The following chart proposes a “decomposed” representation of the main initiatives that have been launched in the EU framework for coordination-cooperation-alignment support actions.

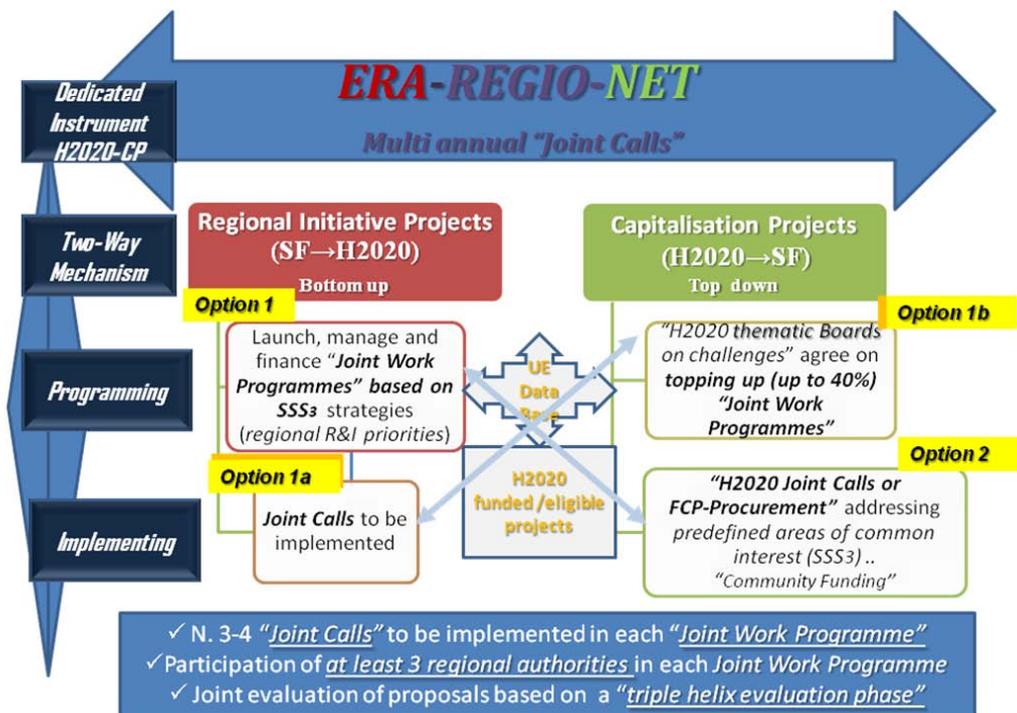
<sup>107</sup> <http://s3platform.jrc.ec.europa.eu/home;jsessionid=RcNWRtBH0zn4r0zYnWjwJKGQnWkJ98wJYmjQYy2Zskyhh80n7p6LI-608925903!1374486791411>

<sup>108</sup> Please note: the approach presented it is not a proposal of the Commission. It rather represents an attempt to promote further discussion on potential synergistic actions.



- The green area highlights the different levels of governance (EU, National, Regional).
- The yellow area comprises distinct types of programmes in terms of managing modalities, planning period, trans-nationality vs regionality, competitive calls vs redistributive criteria, etc.
- The red areas considers the variety of performance dimension that such programmes strive to capture.

Based on this matrix, a variety of instruments/actions aimed at promoting coordination (ERANET- Plus, JPIs, Interreg) have been implemented during previous FP and Cohesion policy regulatory framework. This notwithstanding, regional level instruments merging the experience and best practices of such actions have not yet been taken into consideration. We therefore suggest the possibility to explore and evaluate opportunities to serve this purpose through a dedicated instrument for synergistic actions across programmes: (e.g., ERA-REGIO-NET).



### Potential instruments H2020-CP "ERA-REGIO-NET"

The instrument "ERA-REGIO-NET" is based on a two-way mechanism including a bottom up as well as a top down scheme.

**Bottom up - Regional Initiative Project:** the basic idea is to allow a number of regions (convergence, transition, competitiveness) to cluster their Smart Specialisation Strategies (SSS3) and priorities into a Joint Work Programme through which they could define strategic activities to manage and implement in a logic of cooperation. Such Joint Work Programme could then receive a top up through Horizon 2020 according to the decision and priorities of the related H2020 thematic Board that will be set up in Horizon 2020 for each thematic challenge.

**Top down - Capitalization Project:** further to clustering regional strategies (SSS3) into regional Joint Work Programmes, a consequent process would rely on procurement schemes (e.g., Forward Commitment Procurement). These have to be launched to address specific challenges/priorities identified in the Joint Work Programme of the regions involved. In undertaking this endeavor, full cognizance has to be taken of the EU and South Africa's rights and obligations under the WTO Agreements, in particular the Agreement on Government Procurement.

### Value Proposition through ERA-REGIO-NET scheme



Such a two-way mechanism could promote cooperation among regions while supporting convergence of those lagging behind regions via peer to peer engagement and adoption of best practices as a result of collaboration schemes (Joint Work Programme). The expected outcome lies in the realization of an integrated approach enabling the alignment of objectives and priorities of future calls. It would avoid unnecessary duplication and fragmentation of resources at trans-regional level. It will eventually contribute to the new ERA (European Research AREA) "Reinforced Partnership Approach" aimed to enhance the effectiveness and coordination of national/regional research and innovation systems.

## 6.5. RECOMMENDATIONS

The recommendations made herein aim to improve and support innovation policy and programmes in relation to Innovation Framework Conditions in SA-EU.

### **Recommendation 1: Dissemination of the Report by means of a Workshop**

Esastap 2020 to facilitate a Stakeholder Workshop during which the content of this report will be debated, recommendations considered and suggestions for the improvement of the report in general be made. The content of the revised Report should then be converted into a useful tool which should at least include the dissemination of the content via a suitable website.

### **Recommendation 2: Legislative Environment**

South Africa, like many countries, including the EU, significantly responded to the TRIPS Agreement by improving IPR protection regimes. Recent legislation such as, the Intellectual Property Rights from Publicly Financed R&D Act and the Biodiversity Act align South Africa's policies with international standards. However, due to various reasons (among others, the lack of capacity to implement and to clarify the interpretation of some article of the Acts), these Acts have in some cases resulted in the delaying of signature of SA-EU collaboration agreements, notably the signature of Material Transfer Agreements within the context of indigenous knowledge and bioprospecting.

- The envisaged Workshop to focus on IP ownership and regulatory constrains in respect of material transfer during SA-EU collaborations.
- The envisaged workshop to provide for a session on "Access to medicine, the Patent Act and Innovation in South Africa". This topic will be of interest to may EU partners who sponsor clinical trials at South African Institutions.
- The envisaged workshop to provide for a session on how incentives schemes can directly or indirectly benefit EU-collaborators on SA research projects.

### **Recommendation 3: Stakeholders**

Esastap 2020 to disseminate the general information on all the identified stakeholders by means of a website. This requires a professional approach to ensure that the hyperlinks are active, data is current and the information in general useful to SA and EU stakeholders.

### **Recommendation 4: State of Innovation in SA**

EASASTAP 2020 used the WIPO Global Innovation Index as one of many reports generated by stakeholders around the world to analyse the state of innovation in countries such as South Africa. Esastap 2020 to review

other available reports in more detail with the aim to present a short paper at the envisaged workshop. Briefly, the state of innovation requires further investigation.

### **Recommendation 5: SA-EU Innovation Cooperation**

The Trade, Development and Cooperation Agreement (TDCA) constitutes the legal basis for the overall relations between South Africa and the EU, together with the Science and Technology Cooperation Agreement that was concluded in 1996. In terms of the latter Agreement, scientific collaboration between South Africa and the EU is monitored and facilitated by the Joint Science and Technology Cooperation Committee (JSTCC), established under the Agreement.

5.1 Esastap 2020 to engage with the JSTCC. Furthermore, Esastap 2020 to engage with DST to develop concrete action plans in support of the Horizon 2020 programme.

### **Final remark**

The recommendations above are preliminary recommendations and in support of the envisaged workshop. It is envisaged, however, that further recommendations are made during the workshop.