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1 **The contribution of Regional Centres of Expertise for the implementation of the 2030**
2 **Agenda for Sustainable Development**

3 Shulla K, Leal Filho W, Lardjane S, Sommer JH, Salvia AL, Borgemeister C., Journal of
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5 **Abstract**

6 The implementation of the 2030 Agenda for Sustainable Development and the achievement of
7 the 17 Sustainable Development Goals requires a fully integrated approach between sectors,
8 disciplines, countries, and actors. On the fourth year of its implementation, the uptake of SDGs
9 from non-state actors is increasing around the world, by developing engaging mechanisms for
10 involvement at horizontal and vertical level. Considering that activation of existing
11 partnerships is important for SDGs, in conjunction with creating new ones, this research has
12 analysed the approach of global network of Regional Centers of Expertise on Education for
13 Sustainable Development. An overview of involvement is done based on a survey data, by
14 exploring collaboration in local, national and international scale. Through Hierarchical
15 Classification Analysis, the networks are grouped into clusters with similar characteristics and
16 discussions include challenges and potentialities for intensifying the contribution towards the
17 2030 Agenda.

18

19 **Introduction**

20 The implementation of the 2030 Agenda for Sustainable Development and the achievement of
21 the 17 Sustainable Development Goals (SDGs) require a fully integrated approach between
22 sectors, disciplines, and countries, calling for new strategies addressing a wide range of actors,
23 such as civil society, businesses, academia, regional and international bodies (Caiado et al.,
24 2018).

25 The 2030 Agenda emphasises the role of multi-stakeholder partnerships as a way to engage
26 with and enhance cooperation, explicitly in the Goal 17, “*Strengthen the means of*
27 *implementation and revitalize the global partnership for sustainable development*”, and Target
28 17.16 “*Enhance the global partnership for sustainable development, complemented by multi-*
29 *stakeholder partnerships that mobilize and share knowledge, expertise, technology and*
30 *financial resources, to support the achievement of the sustainable development goals in all*
31 *countries, in particular developing countries*”.

32 Taking into account the importance of partnerships for sustainability, this research analysed
33 the extent to which the 2030 Agenda for Sustainable Development and the 17 SDGs are being
34 implemented by multi-stakeholders networks, specifically among the Regional Centers of
35 Expertise (RCE) on Education for Sustainable Development (ESD).

36 The United Nations University, in Japan, established the first group of seven RCEs in 2005, as
37 a response to the UN Decade on ESD from 2004-2014. There are at present 159 RCEs
38 distributed around Africa, North and South America, Asia-Pacific and Europe
39 (<http://www.rcenetwork.org/portal/rces-worldwide>). They are designed as networks of existing
40 regionally located stakeholders including educational institutions, business, local governments,
41 non-profit organisations and individuals, aiming to translate global objectives to local
42 communities (Mochizuki and Fadeeva, 2008). Governance, collaboration, research and
43 development, and transformative education are at the core of each RCE, acting not as physical
44 centers but as institutional mechanisms to facilitate shared learning for sustainable
45 development (UNU-IAS, 2014). RCEs apply different governance structures according to the
46 affiliated organisation, responsible for coordinating the partners. When universities establish
47 alliances with Regional Centers of Expertise on Education for Sustainable Development, their
48 engagement in regional actions for sustainable development is increased compared to others
49 (Sedlacek, 2013).

50 The scope of the work of RCEs is closely linked to regional sustainability challenges such as
51 sustainable consumption and production, climate change, energy efficiency, vocational
52 training, entrepreneurs' education, eco-tourism, health and well-being, biodiversity and
53 ecosystem services, traditional knowledge, and disaster risk reduction. Within the learning
54 networks, the change of communication during stakeholder learning processes creates
55 conditions for a systemic shift in education to sustainability (Dlouha et al., 2013). RCEs aim
56 to tackle ESD at all levels, especially focused on two important elements such as to consider
57 education as a means towards sustainability and to consider sustainability as an important part
58 of education (UNESCO, 2018).

59 It is argued that the implementation of the SDGs would require alternative governance
60 frameworks, including sustainable governance, horizontal versus hierarchical, meta-
61 governance, or collaborative governance which crosses sector boundaries for a successful
62 performance and public engagement (Emerson, 2012). Multi-actor collaborations are necessary
63 for sustainable orientation of societies, and often due to the complexity of sustainable
64 development challenges, governance through networks is preferred (Meuleman and Niestroy,
65 2015). The principles embraced in SDGs can be translated into policy making if, among others,
66 countries are supported by global economic governance (Leal Filho, 2018). The SDGs offer an
67 innovative approach of global governance, with goal-setting features, which are crucial for the
68 governance strategy (Biermann et al., 2017).

69 The "indivisibility" is considered a crucial point of the 2030 Agenda, recognizing that human
70 development and prosperity are co-dependent across country boundaries (Nilsson, 2017). In
71 the fourth year of implementation, the uptake of SDGs from different actors around the world
72 is increasing. According to interviews with representatives of several European institutions,
73 national governments of the member states have created engagement mechanisms like national
74 councils, inter-ministerial groups, multi-stakeholder committees or consultation processes, and

75 sustainable development commissions, in order to fulfil their voluntary commitments. Despite
76 the global dimension, the implementation of the SDGs depends on the degree of commitment
77 of each country and their prioritization of sustainability (Salvia et al., 2018).

78 Core elements of the 2030 Agenda for Sustainable Development are the follow-up mechanisms
79 that review progress at the national and sub-national levels, and which have to be inclusive and
80 provide a platform for partnerships of major groups and other relevant stakeholders. Paragraph
81 79 of 2030 Agenda calls on Member States to conduct regular and inclusive reviews of progress
82 at the national and sub-national levels, drawing on contributions from civil society,
83 marginalized groups and others. Local governments are mobilizing resources for localizing
84 SDGs, and are establishing diversified partnerships, thus applying multi-level governance and
85 multi-stakeholder engagement for greater accountability, ownership, and coherence (nrg4SD
86 2017). UN Global Compact through the multi-year strategy ‘‘Making Global Goals Local
87 Business’’ encourages businesses of every size and give support for achieving the SDGs by
88 2030 (Global Compact, 2017). Academia and educational institutions can contribute to the
89 SDGs in research, education, operations, governance, and external leadership, according to the
90 Sustainable Development Solutions Network (SDSN, 2017). Key governance challenges, such
91 as stakeholders’ collective action and inclusive decision making, trade-offs and accountability,
92 are considered crucial for implementing the SDGs (Bowen et al., 2017).

93 This research stresses that collaborative action in multi-stakeholder platforms may diffuse the
94 challenges that organisations face with the implementation of the SDGs. Some of the reasons
95 that prevent non-state actors to advance the 2030 Agenda are, among others, weak capacities
96 among some sectors of civil society for national development planning; the fact that many
97 private sector parties perceive sustainability as a barrier to their activities; academia being often
98 disconnected from development planning processes; and the lack of capacities to produce
99 policy-relevant information (UNDP, 2017). The involvement of universities in local and

100 regional development processes requires new collaborative ways for knowledge transfer,
101 which can be determined in collaboration with local and regional societies (Peer and
102 Stoeglehner, 2012) and brings about mutual benefits and synergies on sustainable development
103 (Leal Filho et al., 2019).

104 The governance and sustainability aspects of the SDGs require coordination at different levels.
105 Each level contains complications and limitations, i.e. coordination at the central level is
106 somehow influenced by the degree of independence of other stakeholders and their focus
107 agendas. Insufficient interactions among stakeholders in national networks, and insufficient
108 coordination of actions may not support integration of sustainable development to educational
109 organisations (Vargas et al., 2019). International coordination risks remaining at higher levels,
110 excluding the enormous actions and connections that exist at other, or lower levels.
111 Coordination of the partnerships mainly exists in a horizontal level, but depends on the will,
112 availability and interests of the partners. Networks as an instrument of modern governance can
113 lead to joint policy making, where their autonomous members partially interact according to
114 their different interests (Rouggie, 2002).

115 Although the impact of scale is complex, because action taken in one spatial scale can have
116 diverse impacts on other scales (Scharlemann, 2017), RCEs allow for a distinct definition of
117 scale, perceiving the local level as a wider geographic and knowledge space for practice
118 dissemination (UNU-IAS, 2010). Public, private and civic sectors, in order to identify
119 challenges and direct financial resources can use the data and metrics as a useful management
120 tool in the SDGs context (Mulholland, 2018).

121 The identification of SDGs with regional sustainability challenges for RCEs is a work in
122 progress. Sustainable Development Goals can contribute to better understand sustainability
123 challenges but it is necessary to have a continuous consideration for this mutual link otherwise

124 too much effort will be used for SDGs implementation without addressing in practice the
125 sustainability (Leal Filho, 2018).

126 The 17 SDGs, adopted in 2015 to implement the 2030 Agenda for Sustainable Development,
127 contain 169 Targets and 234 Indicators. While Goals are ambitious, transformational and
128 limited in number, Targets are more specific and measurable and contribute to achieving one
129 or more Goals (SDKP, 2014). The indicators create the framework for monitoring and
130 assessment in order to communicate the results to all the sectors of society (Janouskova et al.,
131 2018). The interactions among the SDGs are context dependent and their effects are highly
132 influenced by application of appropriate governance (Nilsson, 2018).

133 This study analysed the collaborations for the SDGs in a horizontal and vertical level, at
134 regional, national and international scales, and identified clusters with similar characteristics
135 in tackling specific Goals. In addition, it aimed at addressing the question: “**What is the role**
136 **of the multi-stakeholder networks for the implementation of the SDGs in the local level?**”,
137 thereby providing an overview of the current involvement of the RCEs global network.

138

139 **Methodology**

140 To approach the research question, the authors used a quantitative, descriptive method of data
141 collection. A survey was developed and conducted (April-July 2018) within the global network
142 of 159 RCEs, using a list-based sampling frame. Details about it were published in the RCEs
143 e-bulletin 82: June 2018 (Global RCE Network, 2018) and on the Facebook Page of the Global
144 RCEs Network. The survey was voluntary and anonymous and consisted of 25 questions
145 divided into four sections: 1) RCEs and their involvement with the SDGs, 2) networks links
146 within regions and countries, 3) network links in the international context, and 4) barriers,
147 challenges and opportunities, as presented in Appendix A.

148 Despite diversities, such as years of establishment, number of partners, intensity of actions, and
 149 variety of sustainable regional challenges, the general design of RCEs is based on common
 150 features and functionalities that are crucial for their establishment. In this aspect, the study
 151 takes into consideration the similar features that characterise RCEs, and the analyses are based
 152 on the total number of respondents, independently from their continental divisions.

153 The analysis of the results is divided into three sections, as summarised in Table 1 and
 154 presented as follows:

155 Table 1. Overview of how the results were structured and the research questions which guided
 156 the analysis

Section	Associated research question	Questions from the survey
(a)	1) To what extent are the RCEs networks involved with the SDGs implementation? 2) What is the degree of interaction between actors of different types of organisations in horizontal scale? 3) To what extent are these networks connected at national and international levels?	1-12; 15-20
(b)	4) What are similar characteristics of RCEs that deal with specific goals?	All
(c)	6) Which are the challenges and opportunities in dealing with the SDGs?	13, 14, 21-25

157

158 The purpose of section (a) is to answer research questions related to involvement of RCEs with
 159 the SDGs and their connection in national and international levels, giving a general overview
 160 of current involvement of RCEs with sustainability.

161 Section (b) classifies RCEs into groups by using the statistic method of Multiple
 162 Correspondence Analysis (MCA) combined with a Hierarchical Classification Analysis
 163 (HCA), with support of the Software R (R, Core Team, 2013).

164 MCA allows converting nominal data to quantitative data that can be used for hierarchical
 165 clustering. The advantages relay in extracting the most relevant information by combining
 166 different survey answers, and in identifying similarities of the participants from a
 167 multidimensional perspective. It is appropriate to perform clustering on principal components,

168 because MCA associates quantitative variables that summarize all categorical variables
169 (Husson and Julie, 2014) and allows for minimum loss of information when aims to reduce
170 dimensionality (Lautsch and Plichta, 2003).

171 The data from survey contained only nominal responses. No higher order of data was used for
172 the MCA analyses. Survey data were uploaded into Excel and analysed in software R. The first
173 step of MCA is to recode the data, so the data were elaborated accordingly (for instance by
174 indicating the missing values in the data set, from the unanswered questions, with N.A, and
175 coding the answers with values 0 and 1).

176 A limitation of this approach is that it is a descriptive one. The results cannot be generalized to
177 the whole population since they concern only the sample that has answered the survey. Thus
178 no inference or generalizing to the whole population is made. The purpose is to answer the
179 research question connected to similar characteristics among RCEs and work with the SDGs.

181 Section (c) analyses responses from the survey and builds upon the previous sections in order
182 to present challenges and opportunities in dealing with the SDGs in order to indicate the areas
183 of intervention and to give a guideline on how to strengthen the contribution and further
184 involvement of RCEs for the 2030 Agenda for Sustainable Development.

185

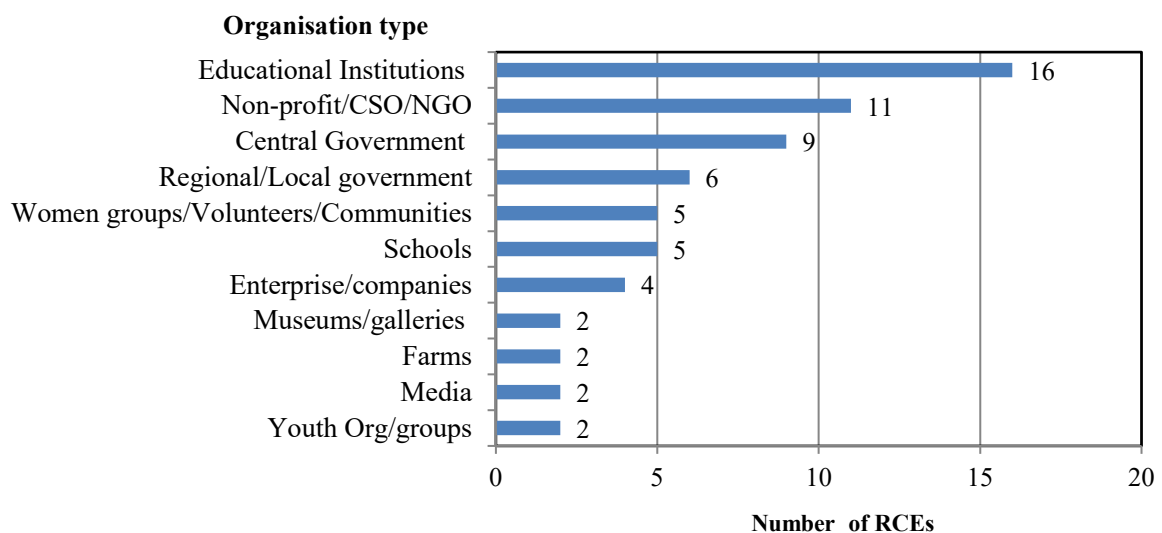
186 **Results and Discussion**

187 There were in total 31 replies to the survey (19.5 percent response rate), belonging to the four
188 RCEs continental groups, respectively 14 from Europe, 8 from Africa and Middle East, 5 from
189 Asia-Pacific, and 4 from the Americas. The results are structured in 4 sections, as presented in
190 the methodology: a) RCEs involvement with the SDGs in a regional, national, and international
191 context; b) RCEs clustering according to similarities in dealing with the SDGs; and c)
192 challenges and opportunities of RCEs dealing with the SDGs.

193 a) RCEs involvement with the SDGs in a regional, national, and international context

194 RCEs networks consist of about 10 to 70 regional partners, where “region” means part of a
195 country or borders between countries. The governance structure of an RCE differs according
196 to the host or affiliated organisation responsible for the partners’ coordination. The host
197 organisations belong to educational institutions, non-profits or civil society, but also to
198 enterprises/companies or local/central governments. At a global scale, most of the RCEs are
199 facilitated by a higher education institution, which also applies to participating RCEs in this
200 study. Approximately 60 percent of them are hosted by educational institutions, 42 percent by
201 non-profit organisations, 16 percent by local governments, 16 percent by businesses, 6 percent
202 from central governments and in 6 percent of the cases they are independent of any host
203 institution.

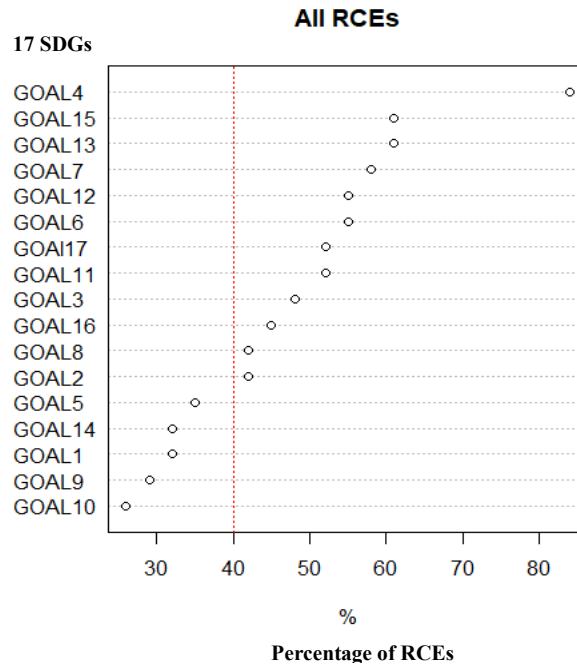
204 The partners’ constellations and types differ (see Figure 1) and their number varies from 2 to
205 16 for each RCE.



206
207 Figure 1: Types of partner organisations of RCEs and number of RCEs that contain these types
208 of in their network

209

210 Based on self-perception, 87 percent of the RCEs believe they are strongly involved with the
211 SDGs. The core focus of RCEs, Education for Sustainable Development (ESD), is a crucial
212 part of the 2030 Agenda for Sustainable Development. ESD is explicitly mentioned in Goal 4,
213 Target 4.7, *“By 2030, ensure that all learners acquire the knowledge and skills needed to*
214 *promote sustainable development, including, among others, through Education for Sustainable*
215 *Development and sustainable lifestyles, human rights, gender equality, promotion of a culture*
216 *of peace and nonviolence, global citizenship and appreciation of cultural diversity and of*
217 *culture’s contribution to sustainable development”*.
218 Consequently, the results of the survey indicate that Goal 4 was used by 84 percent of the
219 respondents, although prioritization of the SDGs locally appears to be strongly connected with
220 efforts to contribute to the entire 2030 Agenda. Consequently, 48 percent of respondents deal
221 with the 2030 Agenda as a whole, 58 percent of them with several Goals and only 10 percent
222 deal with Goal 4 separately. Ranking of most used Goals from RCEs is shown in Figure 2. No
223 clear involvement with Targets and Indicators was identified at this stage, except for Targets
224 of Goal 4 (the most selected, target 4.7, used by 84 percent, targets 4.c, by 55 percent, and
225 targets 4.a by 45 percent of respondents). The most underestimated Goals appear to be SDGs
226 1, 9 and 10.



227

228 Figure 2: Ranking of the 17 SDGs, (from the least to the most used) according to the number
 229 of RCEs expressed in percentage.

230

231 The degree of involvement was analysed at three levels as follows:

232 Level 1 - Regional: Strong features of RCEs enable horizontal cooperation, aiming for equal
 233 partnerships assured by organisational structures and decision-making processes. Regarding
 234 the actions for SDGs, 77 percent of RCEs operate in a horizontal or bilateral consortium, 32
 235 percent of them are leading the process and in approximately 26 percent of the cases,
 236 collaboration is vertical, depending on the funding source.

237 Survey results show that RCEs are currently involved with projects and actions for SDGs,
 238 ranging from 1 to 14 for each respondent. The initiatives consist of research for SDGs (45
 239 percent of the respondents), development projects (71 percent), advertising campaigns (39
 240 percent), but also lectures at universities, SDGs books designed for teaching and community
 241 development. Nevertheless, the outreach of cooperation is not limited to their partner

242 organisations. Seventy-four percent (74 percent) of RCEs are collaborating with other multi-
243 stakeholder regional networks and 55 percent with sectoral networks, i.e. the networks of
244 educational institutions, universities or schools.

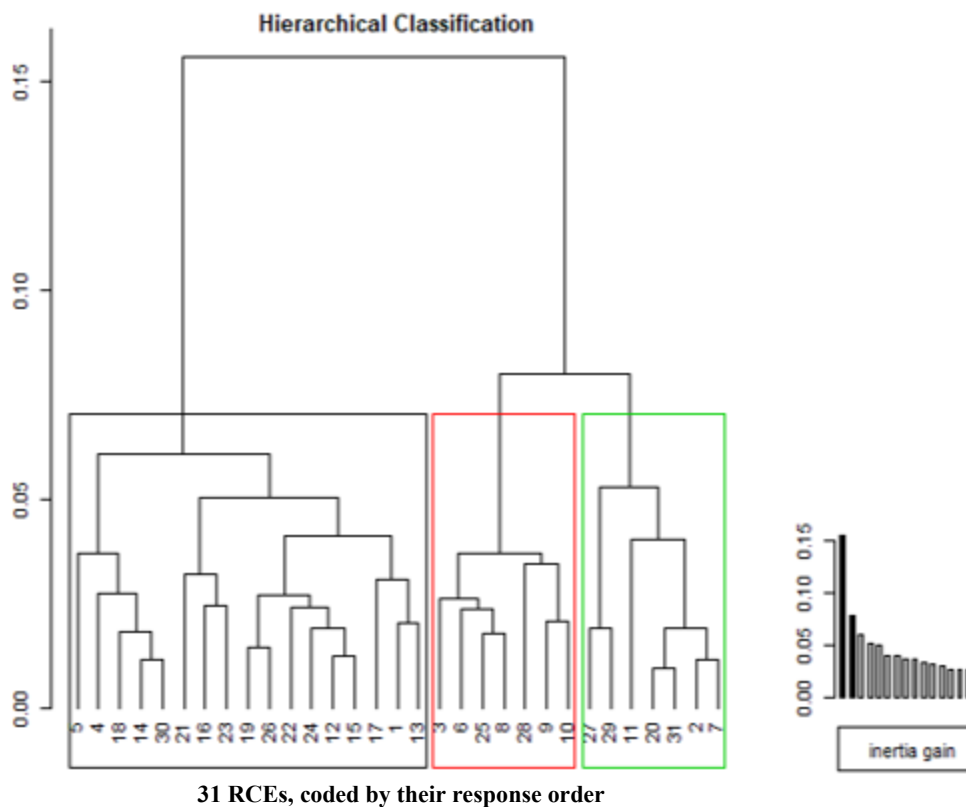
245 Level 2 - National: No strong involvement in national processes for SDGs was identified in
246 this survey. Only 39 percent of RCEs participate in local governments' actions toward the 2030
247 Agenda and consultation processes to respective national/local governments, and 23 percent
248 are part of national committees, 23 percent collaborate only for SDG4, and 19 percent in
249 monitoring and tracking of SDGs progress. Since 2016, according to the Sustainable
250 Development Knowledge Platform, 112 countries have conducted voluntary national reviews
251 (VNRs), 22 in 2016, 43 in 2017, and 47 countries in 2018 (SDKP, 2018). Additional 36
252 countries are expected to conduct them by 2019, and all countries to complete the VNRs around
253 three times during the 15 years. The aim is to facilitate the sharing of experiences, successes,
254 challenges, and lessons learned, in order to accelerate the implementation process, but also to
255 strengthen policies and mobilize multi-stakeholder support and partnerships for the
256 implementation of SDGs. Our results indicate that only 26 percent of RCEs have so far been
257 part of a VNR country process, 52 percent were not involved and 19 percent intend to be
258 involved in the coming years.

259 Level 3 - International: Non-state actors should engage in the 2030 Agenda for Sustainable
260 Development not only through national governments. Regional stakeholders can effectively
261 collaborate with similar organisations and networks outside their country boundaries. RCEs
262 collaboration in the international arena for the SDGs is mainly within the RCEs global network.
263 About 61 percent of RCEs collaborate within global RCEs network and the RCEs coordination
264 Centre at UNU-IAS in Japan, but especially in continental clusters. Further collaborations are
265 with international networks and organisations such as UNESCO, UNDP, Copernicus Alliance,
266 ESD Expert-Net, Erasmus+ Program, Learning Cities, Joint Programming Initiative Urban

267 Europe, and Global Consortium for Sustainability Outcomes Network, European Consortium
 268 of Universities for Innovation, IPBES, Living Knowledge, Earth Charter, and LAG-21,
 269 KYUSYU, EPO.

270 *b) RCEs clustering according to similarities in dealing with the SDGs*

271 Hierarchical clustering and factor map analyses enabled the grouping of RCEs into three
 272 clusters with similar characteristics, by extracting information from the survey answers. The
 273 cutting is done into 3 clusters. The cutting into 2 clusters is considered insufficient to explain
 274 the diversity, while for more than 3, clusters would contain a very small number of respondents.



275 **31 RCEs, coded by their response order**

276 Figure 3. Hierarchical Clustering of RCEs. Numbers horizontally correspond to the 31 respondents.
 277 Cluster 1 shows respondents in black colour, cluster 2 in the green and cluster 3 in red. The cut is performed at
 278 the level of 0.075 (inertia gain) as suggested by the Software R.
 279

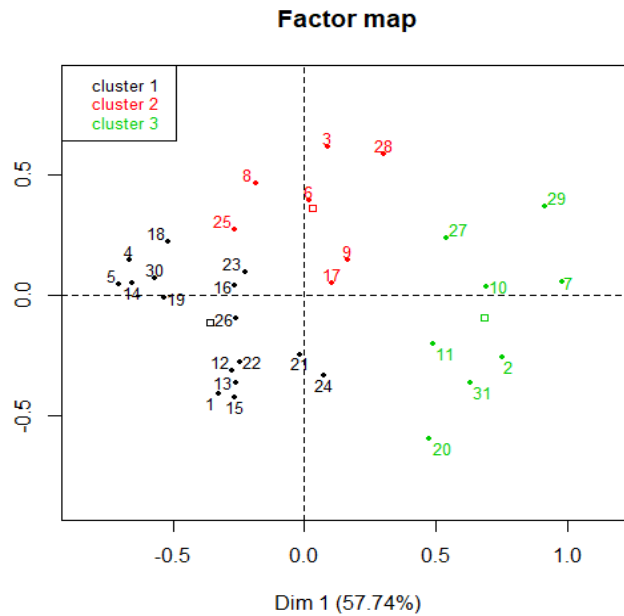
280
 281 Cluster 1 is the biggest with 55 percent of respondents. It is named “ESD focused RCEs”,
 282 because respondents of this cluster are particularly focused on Goal 4, Target 4.7 on Education

283 for Sustainable Development. Additional parts of their work include Goals 13, 14 and 15 as
284 well. These RCEs are equally distributed among continents and affiliated to diverse
285 organisations but mainly educational institutions and non-profits ones. They are self-perceived
286 as “moderately involved” with SDGs. Their collaboration in vertical scale is weak. They mostly
287 operate in development projects for SDGs, in horizontal or bilateral collaborations. For these
288 RCEs, changes in leadership and governance are considered crucial, in order to adapt to the
289 new global objectives. They favour the bottom-up approach to deal with SDGs and consider
290 the networks informality as a factor which fosters collaboration. The major challenge of the
291 participants of this cluster is lack of resources and funds.

292 Cluster 2, named “Thriving RCEs”, belongs to 19 percent of respondents. They are mostly
293 located in Europe and affiliated to educational institutions. Their focus is on Goals 17, 4, 16,
294 and 11 and Targets 4.1, 4.5, 4.7 and 4.c. They are self-perceived as “strongly” to “very
295 strongly” involved with the SDGs, mainly through research and advertising/campaigning. They
296 contribute in national level through participation in VNRs, and in consulting national/local
297 government for the SDG. These RCEs are characterized by long-term financial stability.
298 Collaborations between network partners are horizontal, bilateral or vertical depending on
299 funding scheme. They favour a focus-oriented approach for SDGs and consider informality of
300 networks to have a passive impact to their work.

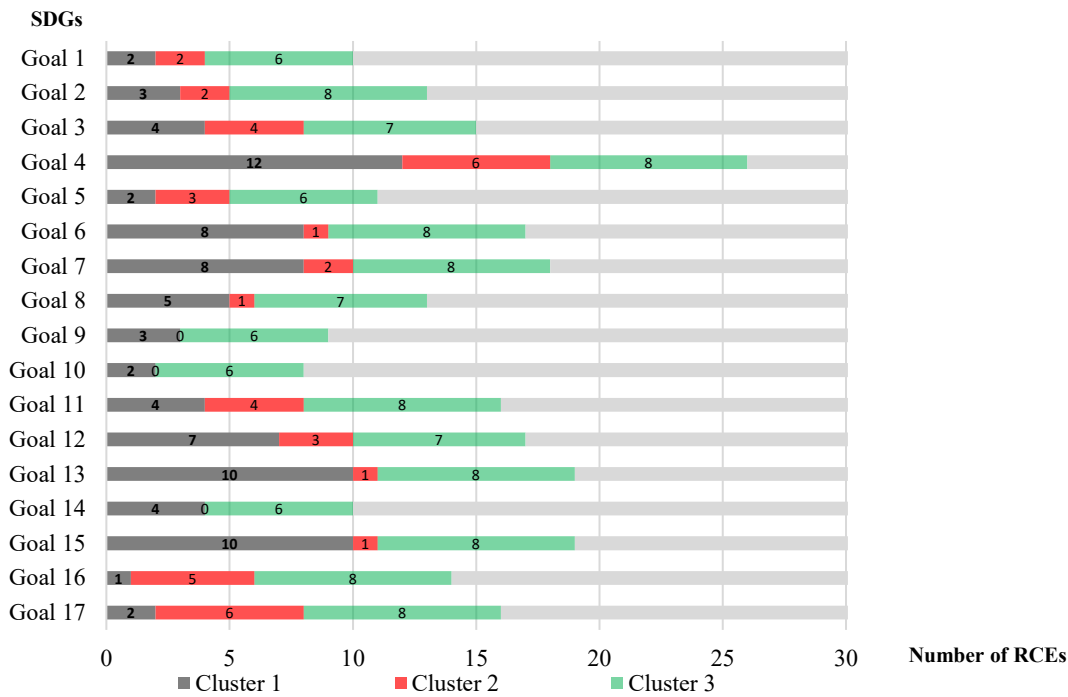
301 To Cluster 3, of “Polyvalent” RCEs, belong 26 percent of respondents. Fifty percent of them
302 are located in Europe and 50 percent in other continents. They are affiliated by diverse
303 organisations. Their actions for SDGs cover Goals 1 to 15, and specifically Targets, 4.3, 4.4,
304 4.5, 4.7, 4.a, 4.c, and range from research and advertising/campaigning to development
305 projects. Self-perceived as “strongly” involved with SDGs, they operate in horizontal or
306 bilateral collaborations but also as leaders of the actions for the SDGs. In vertical level they
307 contribute in national committees for the goals, to VNRs, local government actions. These

308 RCEs are more active in cooperating with international organisations. Their approach towards
 309 the SDGs is a combination of bottom-up and top-down, and they consider the 2030 Agenda as
 310 a method to measure impact. Funding for SDGs remains a challenge.



311
 312 Figure 4. Factor map of 3 RCE clusters. The position of clusters in the factor map shows the “Polyvalent”
 313 RCEs in cluster 3 (green) at a greater distance from the center, while “Thriving” RCEs in cluster 2 (red) are
 314 positioned above 0 on the horizontal axe and “ESD focused” RCEs in cluster 1 (black) are mainly positioned in
 315 the first and third quadrant. Dimension 1(57.74 percent).

316
 317 In Figure 5, are displayed the most used Goals by the RCEs, according to the three clusters.
 318 The analysis shows that “ESD focused RCEs” clearly focus on Goal 4, and very few of them
 319 are involved with Goal 17. On the other hand, SDG 17 appears to be strongly at the focus of
 320 “Thriving RCEs”. Based on the characteristics of the clusters described above, the Polyvalent”
 321 RCEs, which are characterized by very diverse partners, are focused in almost all 17 Goals,
 322 while the RCEs that are based in Europe have a stronger commitment to their country
 323 processes.



325

326 Figure 5. Number of RCEs working with each of the SDGs ordered by clusters.

327

328 *c) Challenges and opportunities of RCEs involvement with the SDGs*

329 Since 2015, RCEs networks have experienced difficulties in explaining their unique concept to
 330 local stakeholders, in securing long-term financial stability, in promoting and making visible
 331 their work. Despite that, additional issues are identified by this study, which can affect their
 332 approach towards the SDGs. The challenges and opportunities discussed in this section derive
 333 from the results of the survey and analysis from the previous sections.

334 Due to the timeline of the 2030 Agenda for Sustainable Development, a sense of urgency is
 335 needed for RCEs to adopt to changing global objectives. Although the majority of respondents
 336 (48 percent) consider the process a continuation of their work on the Millennium Development
 337 Goals, 69 percent of RCEs agree that changes are needed for adapting to SDGs and only 3
 338 percent of respondents believe this is not part of their focus.

339 The complexity of the 2030 Agenda, the ambiguity about Targets and Indicators, and the lack
340 of sufficient indicators for some of the Targets increase difficulties to measure and scale down.
341 Although 29 percent of RCEs find the SDGs Indicators framework useful for measuring their
342 impact, our analysis indicates an active involvement of RCEs with Goals in general but with
343 no clear connection to specific Targets and Indicators.

344 Governance challenges are related to issues such as vertical outreach, horizontal outreach,
345 equal partnership and access in the decision process, and need for structural changes.
346 Autonomy from the hosting organisation is considered as an obstacle only by 19 percent of
347 RCEs. The majority of respondents are hosted by educational institutions, but despite that they
348 are more involved in development projects for SDGs. Consequently, in general no clear link
349 was identified between the hosting organisation and the SDGs actions which assure for positive
350 impact of RCEs outside the hosting organisations. It is also an indication of the expansion of
351 the activities of educational institutions with a broader focus when it applies to the SDGs. The
352 necessity to expand the network with new partners for SDGs is stressed by 74 percent of RCEs.
353 But these networks are voluntary and flexible, thus not always can choose the most influential
354 stakeholders. As a consequence, the network expansion does not always apply to the most
355 effective regional actors with a stake in the SDGs.

356 Another identified challenge is to engage existing partners in long term commitments for
357 SDGs. The results of our survey indicate RCEs partners deal independently with the SDGs in
358 65 percent of respondents, those not involved are 13 percent, and 19 percent might get involved
359 in the future. Despite the fact that the contribution of RCEs can be comparatively modest to
360 the requirement of the regions, these networks can act as agents for directing and orienting
361 partner organisations towards the SDGs. Attempts to include SDGs in the large industry and
362 business sector are more successful compared to small-medium size enterprises. The

363 mobilisation of such enterprises, which are often partners of RCEs, can facilitate localizing the
364 SDGs.

365 Vertical outreach requires a stronger involvement in the country processes and Voluntary
366 National Reports. Vertical integration is considered crucial for the implementation of the 2030
367 Agenda, depending on among other factors from the political will at central level, resources
368 and capacities to deal with Targets and Indicators, and the degree of involvement of the non-
369 state actors. Although additional efforts are required for participating in countries SDGs
370 processes, it can be a means to increase RCEs visibility, and contribute to the accountability of
371 these processes. Furthermore, by participating in the SDGs monitoring RCEs can align their
372 internal evaluation processes with the SDGs metrics and data management tools.

373 Regarding structural changes, only 10 percent of RCEs perceive changes in leadership and
374 governance structures to be necessary for the SDGs process. For future involvements, they
375 prefer mutual coordination (top-down and bottom-up approaches). A majority of them (55
376 percent) believe in a bottom-up approach led by their networks to be more effective for SDGs
377 implementation, while 32 percent of respondents believe in a top-down approach, preferably
378 led by national or international organisations. Forty-five percent of RCEs prefer to use a focus-
379 oriented approach for selected Goals, only when intersected with their thematic issues.

380 For a bigger involvement in the international context, participants stress the need for stronger
381 cooperation within the global RCEs network and other international networks, as well as the
382 provision of guidance and resources from the RCEs coordination centre.

383 The informality of the networks can have adverse effects in the SDGs processes. RCEs are
384 often informal (not necessary legally registered in their countries), ranging from loose networks
385 to, in some cases, solid organisations. This has played a role in their flexibility to deal with
386 regional challenges. The networks' informality is perceived to have a positive impact in their

387 current work for SDGs by 65 percent of respondents, negative impact by 35 percent (i.e. by
388 weakening work visibility) and passive impact (difficult to measure) by 26 percent of them.
389 Only 10 percent of respondents consider it a factor that can undermine their involvement in the
390 SDGs processes.

391 The results of the survey identify the lack of financial resources for the SDGs as the biggest
392 obstacle. Establishing long term financial mechanisms, need for additional resources are
393 considered a major challenge by 94 percent of respondents. SDGs financing require multiple
394 channels not only from member states and international organisations but other sectors as well.
395 Effective private sector engagement can be a considerable additional source. Usually, to
396 encourage joint commitments, multi-stakeholders' networks deal with more financial
397 difficulties than lone sectors (society, business, public sector, academia), thus securing access
398 to "funds for SDGs" which can be an approach to revive networks cooperation.

399

400 **Conclusions**

401 RCEs are acknowledged as an interface of education, research, policy and practice for
402 sustainable development. Their position between regional-international allows for a promising
403 contribution toward SDGs, beyond national commitments. The results of the study show that,
404 despite a slow process and an overall confusion about the 2030 Agenda, RCEs in cooperation
405 with their regional partners, are dealing with most of the Goals. Stronger cooperation with
406 international organisations active in SDGs would secure them a better position in international
407 arena. In addition, participating more actively in national processes for SDGs would increase
408 work visibility and vertical outreach.

409 Since networks are dependent on their regional contexts and other circumstances, despite
410 unique aspect of the global RCEs network, it is difficult to generalize the results based on the

411 total number of the respondents. Clustering the RCEs has shown that characteristics such as
412 governance styles, leadership, number and type of partners, hosting organisations, can define
413 their overall approach and focus on specific Goals. RCEs are dealing with the 2030 Agenda as
414 a whole, confirming its indivisibility, despite their universal aim to influence policies through
415 Education for Sustainable Development. Only one of the clusters was clearly focused on Goal
416 4, Target 4.7. Existing networks and platforms active in sustainable development need
417 additional efforts and resources to commit to new global objectives. Engagement in innovative
418 mechanisms for localizing SDGs can facilitate revitalization of these formal or informal
419 networks.

420 In order to help RCEs redefining objectives and setting priorities for the future, the study
421 suggests the following recommendations:

- 422 - Create a sense of urgency for adopting to the 2030 Agenda.
- 423 - Increase the participation of the business sector for joint commitments for the SDGs.
- 424 - Increase horizontal outreach by extending network with new influencing partners with
425 interest in SDGs related issues.
- 426 - Increase partner's access to network decision making process.
- 427 - Engaging the existing partners in long term commitments for the SDGs.
- 428 - Increase vertical outreach, by bigger participation in SDGs national processes, such as
429 national committees for SDGs and in preparation of NRVs.
- 430 - Align SDGs monitoring framework with the internal evaluation processes.
- 431 - Encourage collaborations for SDGs with other RCEs through RCEs global network.
- 432 - Establish collaboration with the international organisations active in SDGs processes.
- 433 - Encourage joint financial commitments among the network partners for the SDGs.
- 434 - Identifying and secure access to financial channels for the SDGs.

435 Some limitations of this study are the extent of participation from the global RCEs
436 community, especially those outside Europe, and the lack of information on their work with
437 specific SDGs Targets and Indicators for enabling a more in-depth results on their
438 interactions.

439

440 **Implications for theory and practice**

441 Theoretical contribution of the paper consists of a review of the literature about the governance
442 and partnerships for sustainable development, and state of the art on the work of the RCEs. The
443 practical contribution is related to the fact that the study addresses the operation difficulties
444 and issues to approaching the SDGs as part of the work of the RCEs, thus filling a research gap
445 in this aspect and adding a degree of novelty to the work. Multi-stakeholder partnerships can
446 positively address global change, but to evaluate, understand and improve it, remains a
447 challenge for researchers and practitioners (Pattberg and Widerberg, 2016). Ambiguity
448 regarding the goals and monitoring mechanisms challenge the link between the output and
449 impact of multi-stakeholder partnerships for sustainable development, asking for testing of
450 their advantages toward the SDGs (Pattberg and Widerberg, 2014).

451 Scholars from different perspectives have analysed the role of networks and partnerships for
452 sustainable development. From the policy perspective, networks contribute to the creation of a
453 benchmark for policy development, by increasing consistency among member
454 institutions (Dlouha, et.al 2017). Complex social and environmental issues call for cross-sector
455 social partnerships, where partner diversity, and especially non-profit sector involvement,
456 activates transformative social change (Yan, Lin, and Clarke, 2018). Although, there is a
457 necessity to identify the circumstances under which multi-stakeholder partnerships can be
458 effective, they can represent a fundamentally innovative approach to achieving the SDGs with
459 substantial results when certain conditions are met (GIZ, 2017).

460

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464

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585 Appendix. A. Survey “Role of networks in SDGs implementation”

Section 1) RCEs and their involvement with SDGs	
1.	Where is your RCE located? <ul style="list-style-type: none"> ● Africa and Middle East ● Asia - Pacific ● Europe ● The Americas
2.	What is your affiliated organisation? <ul style="list-style-type: none"> ● Educational Institution ● Local Government ● Central government ● Business ● Non-profit ● Other
3.	Thematic focus of your RCE belongs to? (Subdivision of the Goals according to the UNSSC list of Goals in questions 6) <ul style="list-style-type: none"> ● MDG’s Unfinished Business (Goals 1-5) ● New Areas; Water, Energy, Economic Growth, Industry, Inequality, Urbanization (Goals 6-11) ● Green Agenda (Goals 12-15) ● Governance (Goal 16) ● Partnership (Goal 17)
4.	Based on your opinion to what extent is your RCE involved with SDGs? 0 (Not involved) -1-2-3-4-5 (Strongly involved)
5.	Do you deal with? <ul style="list-style-type: none"> ● The 2030 Agenda For Sustainable Development, as a whole ● Several Goals ● Only Goal 4. Ensure inclusive and equitable quality education ● Other
6.	Please select which specific Goals <ul style="list-style-type: none"> ● GOAL 1: No Poverty ● GOAL 2: Zero Hunger

<ul style="list-style-type: none"> ● GOAL 3: Good Health and Well-being ● GOAL 4: Quality Education ● GOAL 5: Gender Equality ● GOAL 6: Clean Water and Sanitation ● GOAL 7: Affordable and Clean Energy ● GOAL 8: Decent Work and Economic Growth ● GOAL 9: Industry, Innovation and Infrastructure ● GOAL 10: Reduced Inequality ● GOAL 11: Sustainable Cities and Communities ● GOAL 12: Responsible Consumption and Production ● GOAL 13: Climate Action ● GOAL 14: Life Below Water ● GOAL 15: Life on Land ● GOAL 16: Peace and Justice Strong Institutions ● GOAL 17: Partnerships to achieve the Goal <p>7. Do you work with specific targets and indicators? There are 161 targets and 244 indicators approved (232, + 9 indicators repeat under 2 or 3 targets), classified into Tier I,II,III, on the basis of their level of methodological development and the availability of data at the global level. (if yes, please name from the list https://unstats.un.org/sdgs/indicators/indicators-list/)</p> <ul style="list-style-type: none"> ● Yes ● No <p>8. Please select which of SDG4 targets you work with? (7 outcome targets, 3 means of implementation)</p> <ul style="list-style-type: none"> ● Target 4.1 ● Target 4.2 ● Target 4.3 ● Target 4.4 ● Target 4.5 ● Target 4.6 ● Target 4.7 ● Target 4.a ● Target 4.b ● Target 4.c ● None <p>9. Is your RCE involved in?</p> <ul style="list-style-type: none"> ● Research for SDGs? ● Development projects for SDGs? ● Advertising/Campaigning for SDGs? <p>10. In how many projects or actions? (Please divide according to question 9 if possible)</p> <p>11. With how many partners for each? (Please mention the type of partner organisations if possible)</p> <p>12. What kind of collaboration?</p> <ul style="list-style-type: none"> ● RCE is leading the process ● Horizontal consortium or bilateral ● Vertical, depending on funding organisation <p>13. In the light of 2030 Agenda, will your RCE undertake changes as?</p> <ul style="list-style-type: none"> ● Expand number of partners ● Change Leadership forms ● Change governance structure ● Adopt your programme and strategies to include the SDGs ● No Changes <p>14. Are your affiliated organisation or partners organisations independently involved in SDGs?</p> <ul style="list-style-type: none"> ● Yes ● No ● Maybe
<p>Section 2) networks links within regions and countries</p> <p>15. Is your RCE collaborating with other networks in your region, for the 2030 Agenda for Sustainable Development?</p> <ul style="list-style-type: none"> ● Networks of the same type of organisation (Ex. the networks of Educational institutions, universities or schools) ● Multi-stakeholder Networks (ex. business, public institutions, civil society, communities, educational institutions etc)

- Other
16. Are you part of the national review process of your country? As part of its follow-up and review mechanisms, the 2030 Agenda for Sustainable Development encourages member states to "conduct regular and inclusive reviews of progress at the national and sub-national levels, which are country-led and country-driven" <https://sustainabledevelopment.un.org/memberstates>
- Yes
 - No
 - Maybe
17. In country level, do you contribute in?
- National committees created by your central government for SDGs
 - Committees created by Responsible Ministries for SDGs
 - Local government's actions toward 2030 agenda
 - Monitoring and tracking of SDGs progress
 - Consultancy for SDGs to national/local gov.
 - Only for specific Goals of your focus. i.e SDG 4
 - Other:
18. Have your National/Local Government, allocated accessible funds for SDGs?
- Yes
 - No
 - Maybe

Section 3) network links in the international context

19. Do you collaborate with international organisations or networks for SDGs? EX. Sustainable Development Solutions Network, Global Compact, European Sustainable Development Network, UNDP, SDGs Watch, European Union Institutions, etc
- Yes
 - No
20. Within the RCE global network, do you collaborate for SDGs with?
- Other RCE-s for SDGs implementation
 - RCE coordination Center and UNU
 - RCEs within continental groups
21. Do you think RCEs involvement with SDGs should be?
- Top down process (from international or national level)
 - Bottom up (from individuals, organisations, local networks)
 - Focus oriented (only when intersected with your own thematic focus)

Section 4) barriers challenges and opportunities.

22. Your involvement with SDGs is compromised by?
- Lack of funds
 - Lack of resources and staff
 - Lack of time
 - Not on your focus
 - Lack of autonomy from affiliated organisation
 - Your Government is not active in 2030 Agenda
 - You are not involved in national/ local Gov actions
 - Other
23. The informality of the networks can influence SDGs by?
- Foster collaboration
 - Undermine the process
 - Difficult to measure and evidence the work
 - Weakens the visibility
 - Passive contribution
 - Other:
24. Do you find the 2030 Agenda for Sustainable Development?
- A method to measure impact of your network and organisation
 - Ambiguous about targets and indicators
 - Difficult to measure and scale down
 - Very useful for your work
 - A continuation of your work for MDG on ESD
25. Please add other problems/barriers for your involvement with SDGs

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