



Collaborations Practice Implementation on Education for Sustainable Development in Host Universities of Regional Centres of Expertise, Kenya

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The study sought to assess the scope of collaborations practice implementation on education for sustainable development (ESD) in host universities of Regional Centres of Expertise (RCE) in Kenya as well as the challenges faced thereof. The study was conducted using a mixed methodology with concurrent model of triangulation and descriptive survey research design to collect both qualitative and quantitative data. The study established that host universities had made efforts to implement RCE collaborations practice on ESD through creation of new partnerships. Cooperation and coordination among the stakeholders was well supported by the host universities through collaborative governance where stakeholders were involved in decision making. The study recommended that host universities of RCEs should be more intentional in creating awareness on RCEs and ESD through university community outreach programs in order to build capacity in social learning and networking on ESD.

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1. INTRODUCTION

Regional Centres of Expertise on education for sustainable development were instituted to promote implementation of education for sustainable development at the onset of the United Nations Decade of Education for Sustainable Development (UN-DESD, 2005-2014) during the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002. According to United Nations University (UNU) [1] an RCE is not a centre in the regular sense but a linkage of current formal, non-formal and informal education organizations, mobilized to deliver education for sustainable development (ESD) to local and regional communities. It is distinguished by a clearly defined structure of governance and management, a participation in transforming prevailing instructional pedagogies, involvement in advancing collaborations and supporting research activities in its ESD activities [2].

The RCEs are mostly hosted in universities and other higher education institutions. This allows them to incorporate and operationalise the RCE institutional management practices of governance, research and development, collaboration and transformative education in the overall institutional management to enhance ESD activities and programs. Being networks of institutions and organizations that partner to promote education for sustainable development in their regions, host universities of RCEs are required to facilitate the creation and management of collaborations by bringing in new partners [2].

Collaboration entails tending to the commitment of practitioners from all ranks of formal, non-formal and informal education. RCEs are required to strengthen three kinds of links among partners; between diverse levels of educational institutions (vertical links), between parallel educational establishments, such as schools in a region (horizontal links), and between non formal educational institutions and organizations that champion the advancement of ESD (lateral links). It is imperative to make a conceptual differentiation between the three categories of links as each accentuates the prominence of a specific kind of collaboration, thereby guiding collaborative activities [2]. Integration of the traditional university role of community outreach

with the RCE core practice of collaborations aims to facilitate collaboration in projects to enhance ESD activities and programs.

Institutional management is the practice of laying out strategies and establishing available production resources to run a successful organization [3]. In the case of an RCE, the host university is one of the partners with the capacity to use its customary role of teaching, research and community outreach to guide the region to achieve sustainable development through ESD. Host universities are in a position to ensure achievement of the aspirations of an RCE through the institutional management of the core practices/elements, collaborations being key among them. They can achieve effective networks incorporating new partners and facilitating meetings by calling partners together to organize ESD activities. As key partners and hosts of RCEs, the contribution of host universities in implementing RCE collaborations practice helps to elevate the local and regional role of universities in delivering ESD outcomes [4].

1.1 Statement of the Problem

Regional centres of expertise in education for sustainable development were instituted to facilitate the creation of awareness on environmental conservation and sustainable development practices through ESD. Host universities of RCEs are expected to play a key role in mainstreaming the RCE collaborations practice in their traditional role of research, training and community outreach for successful ESD activities and programs. In Kenya, the realisation of ESD in the RCE host universities and RCE in general has been generally wanting due to low levels of understanding of the RCE concept and the principles of ESD among the various stakeholders. Consequently, the level of environmental sustainability awareness in Kenya continues to be low resulting to environmental degradation and unsustainable development patterns. The successful implementation or functional collaborations/partnerships through the facilitation of host universities would help to address this problem.

Though the RCE host universities in Kenya have endeavoured to implement the RCE collaborations practice on ESD in their campuses

and collaborating institutions, the outcomes of these efforts have been hampered by several challenges. This has continuously led to relative inactivity in the RCEs and consequently an impediment to the realization of the aspirations of RCEs to enhance ESD activities and programs. There is a need therefore for RCE host universities' management to mainstream the RCE collaborations practice in their traditional triple mandate. The study outcomes contributed information on how to advance ESD best practices and create awareness through effective collaborations and partnerships. The continued state of deteriorating environmental quality calls for heightened creation of awareness through education for sustainable development activities and programs resulting from adequate implementation of RCE collaborations practice.

1.2 Purpose of the Study

The purpose of the study was to assess the collaborations practice implementation on education for sustainable development in host universities Regional Centres of Expertise, Kenya.

1.3 Objective

- I. Assess the scope of collaborations practice implementation on education for sustainable development in host universities of Regional Centres of Expertise;
- II. Establish the challenges faced in collaborations practice implementation on education for sustainable development in host universities of RCEs.

2 LITERATURE REVIEW

2.1 Regional Centres of Expertise Collaboration Links

According to Fadeeva & Mochizuki [5] collaboration in RCEs entails attending to the commitment of players from all levels of formal, non-formal and informal education. RCEs are required to support three kinds of links amongst partners. Vertical links are those between different levels of educational institutions, horizontal links are those between educational institutions of the same level such as schools in the same local area, while lateral links exist between educational institutions and organizations that may not be part of the formal

education but participate in promoting ESD. Fig. 1 shows the various types of links explained above.

Fadeeva [6] adds that the vertical, horizontal, and lateral links have important conceptual differences that are worth noting. Each category of link puts emphasis on a specific kind of collaboration thus guiding the collective engagements therein. Horizontal links emphasize the significance of experiences of parallel organizations in the same area while the emphasis of lateral links would be on the importance of exchange of experiences between different types of organizations. Ofei-Manu and Shimano [7] go on to observe that the significance of establishing different types of links arises from the fact that developing interactions between similar and different organizations may necessitate different types of efforts. These efforts complement each other in enhancing ESD activities and programs as well as sustainable development in the regions.

2.2 Collaboration Practice Implementation in Host Universities of Regional Centres of Expertise in ESD

Having the twofold quality of generators and disseminators of knowledge, universities and other institutions of higher education are well placed to manage RCE collaboration for effective ESD activities and programs. They perform a major role as knowledge centres making a contribution to regional inventions and also to the effectiveness of social interrelations of the regions [8]. Studies and reports have been done on the activities and operations of several RCEs, collaborations included. The discussions provided hereunder highlight how host universities have supported collaborations in named RCEs and how this has impacted on ESD in the regions. This will provide a basis for the current study.

According to Rickers & Hermans [10] RCE Rhine Meuse was the first RCE established in Europe in May 2005 and is a recognized member of the RCE global family. It is hosted and coordinated by Zuyd University of Applied Science. Though established in the Netherlands, the activities of RCE Rhine-Meuse stretch over 3 countries: the Netherlands and the border regions of Belgium and Germany. Not only does the host university facilitate the RCE to integrate ESD into formal

education practices, it also integrates it in the exchange of knowledge between various institutions, local authorities and companies, mainly in the urban perspective. By so doing, the RCE through the institutional management of Zyud University ensures that sustainable development is wholly reflected in decision-making at regional level. Partners in the RCE Rhine-Meuse include 4 universities, 20 municipalities, 2 Provinces, 60 primary and secondary schools, numerous top knowledge institutes and over 80 companies that connect and pool their services for innovation through ESD. The RCE is an important network for UNESCO Netherlands and is in close cooperation with leading networks in Europe in the realization of free enterprise and the participation of private industry in education that is in line with sustainable development.

Rickers Hermans & Eussen [10] report that with the leadership and coordination of Zyud University the RCE Rhine Meuse set out to bring together stakeholders who would form a platform for inventions and new ideas in ESD and its implementation. By organizing workshops, meetings, and various other events, the host university assisted the RCE to create a ground that was neutral for prospective collaborators to discourse on collaboration in sustainability activities. From the viewpoint of the founder organisations and institutions, the nature of activities planned by the RCE have led to both student involvement, through practicums or

activities based on curriculum, and staff contribution in projects in the region. This has helped to upscale ESD activities and programs in the region.

It is a primary requirement that an RCE collaborates with other RCEs to allow for exchange of ESD implementation strategies. Rickers & Eussen [10] continue to report that through the leadership of Zyud University, the RCE Rhine-Meuse, actively participates in internationally-organized thematic networks and it closely collaborates with other European RCEs in ESD activities and projects. Through the enablement by the host university the RCE has been involved in organization and actively participated in RCE gatherings at international and regional levels. Within the global RCE community, RCE Rhine-Meuse has through the host university developed or is developing special relations with RCE Penang, RCE Greater Nairobi and RCE Skane. Together with this, the host university supported the RCE to be among those who actively organized the 2008 International RCE Conference among others. It also offers support and guidance to other acknowledged or emerging RCEs through contact and visits [9]. These collaborations have helped to advance ESD activities and programs through inter-RCE sharing and networking. This has been achieved through the successful institutional management of collaborations practice by the host Zyud University.

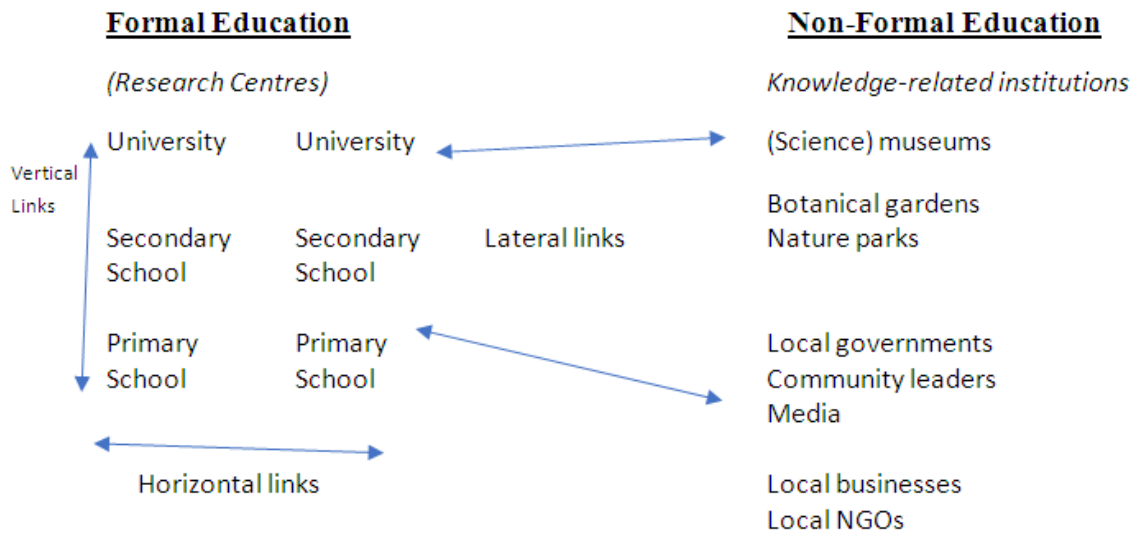


Fig. 1. RCE collaboration links (Adapted from RCE concept paper, UNU [2])

Located in City of Sendai in northern part of Japan, the Greater Sendai RCE was formally inaugurated in June 2005. The RCE is hosted and coordinated by the Miyagi University of Education (MUE) which works closely with the City of Sendai. Together they launched "Forum for Environmental Education and Learning in Sendai, City of Trees" (also called "FEEL Sendai") in 2004. FEEL Sendai helps to coordinate partnerships and linkages between and among schools, NGOs, universities, businesses and public administration, among others [11].

As the host university, MUE in collaboration with Kesennuma Omoso Elementary School's systematic EE program have developed a program to promote a vertically aligned ESD curriculum implementation from elementary through high school. The collaboration also integrates horizontal partnership with several regional and international partners. The Liaison Council of University Centres inaugurated in MUE, organizes all six allied centres of MUE, which include the Environmental Education Centre, International Education Centre, and Special Education Centre. This enables the RCE to focus and support varied strategic perceptions of ESD projects with MUE as the lead partner. There are numerous other new collective projects that have been established under the Greater Sendai RCE framework through the RCE institutional management practices of MUE [12].

A report on RCE Greater Sendai by Mochizuki [11] indicates that in the City of Sendai, MUE as the RCE host has well-established partnerships with NGOs. However, there is need to facilitate collaborations between formal and non-formal education sectors by operating more closely with the local boards of education and the Environment Bureau of the City of Sendai. He further adds that MUE has supported collaboration with the local board of education, the Environment Bureau of the City of Sendai and other regional partners to steer effective implementation of ESD in the region.

The Education faculty of Rhodes University hosts the secretariat of RCE Makana and Rural Eastern Cape and has a community engaged partnership with Makana Municipality. The vision of the RCE is to enable the development and sharing of expertise to enhance and coordinate education and training in response to the problems and threats that affect the health and well-being of the residents and environment in

the Makana District and in the rural Eastern Cape. With the support of Rhodes University, the RCE partners with several student organizations, youth/women groups, research organizations, schools, local Authorities and community centres, among many more in advancing implementation of ESD [13].

2.3 Challenges of Collaborations Practice Implementation in Host Universities of RCEs

From the reviewed literature on RCE collaborations practice implementation, reviewed studies show that the host universities in Europe, Asia and South Africa have developed horizontal, vertical and lateral collaborative links as advocated by the United Nations University [1]. This has contributed to vibrant RCEs with significant success in ESD activities and programs in these regions. Various challenges to the implementation of successful RCE collaborations practice have however been cited.

The fact that individual stakeholders may have conflicting or contrasting ideals or expectations about how they visualise the implementation of ESD and sustainable development practices within the RCE poses the challenge of synergy among the partners in the RCE. There is also the possibility of competitive rivalries among the various stakeholders coming up as reported by Rikers and Hermans [9] and Fadeeva & Mochizuki (2010). This aspect is highlighted by Rikers and Hermans, [9] who report that a lot of effort had to be put in to convince the partners of the network that the RCE was not a competition which helped to create a "neutral" collaboration platform. Dahms et al. [14] also cite the lack of a formal conceptual framework for development as a hindrance to the stakeholder collaboration and networking process of an RCE. Issues of concern raised in the study touched on funding, governance the level of input and expertise that was expected from partners who pledged commitment to the RCE.

In Kenya, Ndaruga [15] underscores the fact that many RCEs have not mobilized stakeholders appropriately, citing lack of funds to convene stakeholder meetings and organize ESD activities and programs. He further notes that there seems to be a general laxity in host institutions and failure to invest in mobilizing local support in creating collaborations.

3. METHODOLOGY

This study employed a mixed methodology approach which uses both quantitative and qualitative methods and the concurrent model of triangulation with descriptive survey design [16]. The mixed methodology was deemed suitable for this study since both quantitative and qualitative data was collected to assist in answering the research questions. According to Weaver and Olson [17], qualitative research normally involves extensive examination of fairly limited foci which provide an intense set of data which is gathered and arranged. Quantitative research involves the accurate use of statistics to a characteristically significant number of subjects.

The study targeted a population of 428 respondents derived from the eight UNU registered RCEs in Kenya. This included 8 RCE coordinators, 270 lecturers from the host university departments that facilitate RCEs and heads or representatives of 150 RCE collaborating institutions. These are formal and non-formal institutions and organizations of ESD practitioners. By use of purposive sampling three out of the nine acknowledged Regional Centres of Expertise in Kenya were selected for the study. These included RCE Greater Nairobi hosted at Kenyatta University, RCE Mau Complex hosted at Egerton University and RCE Central Kenya hosted at Kimathi University. The study sample was 93 respondents representing 22% of the total population. The sample comprised of all the three coordinators of the purposively sampled RCEs, a simple random sample of 10 collaborating institutions from each of the RCE and a purposive sample of 20 lecturers from each university from departments that support RCEs. The sample was deemed adequate in line with Gay [20] who avers that a sample of at least 10% of a population is deemed adequate for descriptive studies.

The study used 5-scale Likert-type ordinal scale questionnaires to collect quantitative data from lecturers/coordinators, performance contracting secretariat and heads/representatives of RCE partner institutions/organizations. This enabled

the researcher to come up with quantitative data which allowed statistical analysis. Qualitative data was collected using both closed and open-ended questions in the questionnaires as well as informant interviews with the RCE coordinators. Further qualitative data was collected using a document analysis guide. The qualitative data collected was analysed thematically. In this study, the researcher collected and analysed quantitative and qualitative data separately on the same phenomenon and then the different results were triangulated (by comparing and contrasting the different results) at the interpretation stage. The concurrent model of triangulation design was selected for this study due to its efficiency in that both types of data were collected during the same phase of the research at approximately the same time.

4. RESULTS

4.1 Questionnaire Response Rate

The researcher sampled a total of 93 respondents from the three RCEs selected for the study. The sample was composed of the coordinators of the RCEs, lecturers, performance contracting secretariat members and heads or representatives of collaborating institutions. 85 out of 93 participants responded to the investigation which is 91.4%. Table 1 shows a summary of the return rate.

4.2 Collaborations Practice Implementation on Education for Sustainable Development

Information on the extent of RCE collaborations practice implementation on ESD in host universities was sought from lecturers through a questionnaire. Descriptive analysis was carried out using frequencies and percentages arising from variables derived from a 5-point Likert scale that sought the views of the RCE coordinators/lecturers of host universities. The statistical analysis with reference to the variables is provided in Table 2.

Table 1. Questionnaire response rate

Sample size	Participants	Non participants	Response rate
N = 93	N = 85	N = 8	N = 85
22 %	91.4 %	8.6 %	91.4 %

Table 2. Responses of lecturers on RCE collaborations practice implementation on ESD

Statements		SA	A	U	D	SD
The University has supported creation of new partnerships in the RCE since acknowledgement	F	10	35	4	5	1
	%	18.2	63.7	7.3	9.0	1.8
The University facilitated participation in sustainable community work at local, regional, national or international levels	F	8	40	3	1	3
	%	14.6	72.8	5.5	1.8	5.5
The University assisted the RCE to identify and consolidate networks among stakeholders to document, share and publish info on ESD best practices and lessons	F	3	36	7	8	1
	%	5.5	65.5	12.7	14.4	1.8
The University has fostered linkages with local education boards to promote ESD activities and programs in local schools	F	6	27	8	10	4
	%	10.9	49.0	14.6	18.2	7.3
The University promoted mentoring of partners on ESD implementation strategies in the RCE	F	7	24	9	12	3
	%	12.7	44.1	16.4	21.8	5.5
The University has helped in scaling up multi-stakeholder networks at community level within the RCE	F	6	30	6	9	4
	%	10.9	54.5	10.9	16.4	7.3

Key: 5-Strongly Agree, 4-Agree, 3-Undecided, 2-Disagree, 1-Strongly Disagree

According to UNU [1] RCEs are to establish collaborations between organizations and institutions at the regional and local level to jointly support ESD activities and programs. The researcher therefore sought to establish whether the university management had supported creation of new partnerships in the RCE since acknowledgement. An overwhelming majority comprising of 45 (81.82%) respondents strongly agreed or agreed that the host universities had indeed facilitated establishment of new collaborations since their acknowledgement with UNU. This indicated that the host universities had taken the first step in the implementation of RCE collaborations practice.

The researcher then sought to find out whether the host universities had supported participation in sustainable community work at local and regional levels to promote ESD activities and programs. This seemed to be the case with 48 (87.3%) of the participants responding positively. This finding agrees with a report by Dahms, Mcmartin and Petry [14] which noted that a key element of the RCE Saskatchewan model to harness strengths towards educational innovation for ESD, is the participation of local communities. The next statement sought to find out whether the host universities had fostered linkages with local education boards to promote ESD activities and programs in local schools. The statement elicited 33 (60%) positive responses and 14 (25.5%) negative responses.

The next statement sought views on whether the host universities had promoted mentoring of partners in the RCE on ESD best practices. This was agreed on by 31 (56.8%) of the respondents while 15 (27.2%) held a negative view and 9 (16.4%) were undecided. Natori [18] supports this findings in his paper on role of higher

education in developing and mentoring RCEs in implementation of ESD projects. The respondents were then asked whether the host university's management of collaborations practice had assisted in scaling up multi-stakeholder networks at community level within the RCE to enhance ESD activities and programs. A good majority of 36 (65.5%) of the respondents agreed with the statement while 13 (23.6%) disagreed. The findings agree with those of a case study of RCE Rhine-Meuse which reported that the partners of the network willingly to participated and shared knowledge in regional projects that had sustainability themes [8].

4.3 Responses of RCE Partners on Collaborations Practice Implementation on Education for Sustainable Development

To further explore the extent of collaborations practice implementation on ESD in host universities of RCEs, the heads or representatives of collaborating institutions were asked to indicate their views on various aspects of collaborations practice through a 5-point Likert type questionnaire. The results are presented in the Table 3.

The researcher sought to assess the level of implementation of RCE collaborations practice on ESD in the host universities of RCEs by asking the heads/representatives of partner institutions/organizations whether the host Universities facilitated networking and communication opportunities in the RCE. This statement was overwhelmingly agreed upon by 28 (93.3%) of the respondents. It is also important for partners within the RCE to be coordinated and cooperate in ESD activities and

Table 3. Responses of RCE partner institutions on collaborations practice implementation on ESD

Statements		SA	A	U	D	SD
The host University supported networking and communication opportunities in the RCE	F	4	24	2	0	0
	%	13.3	80	6.7	0	0
The host University supports cooperation and coordination between my institution/organization and others in the RCE network is strong	F	2	18	8	2	0
	%	6.7	60	26.7	6.6	0
My institution/organization partners with others in the RCE in ESD activities and projects	F	4	24	1	1	0
	%	13.3	80	3.3	3.3	0
My institution/organization is involved in sustainable community work or partnerships at local and regional levels.	F	11	18	1	0	0
	%	36.7	60	3.3	0	0
My institution/organization benefits as a partner in the RCE through collaboration on ESD events facilitated by the host university	F	8	21	1	0	0
	%	26.7	70	3.3	0	0

Key: 5-Strongly Agree, 4-Agree, 3-Undecided, 2-Disagree, 1-Strongly Disagree

projects within the RCE. 20 (66.7%) of the respondents were in agreement that host universities had supported cooperation and coordination between their institution/organization and others in the RCE network. The statement was refuted by 2 (6.6%) respondents while 8 (26.7%) could not make a decision. This implies that the host universities had created a suitable environment for the different partners in the network to act cooperatively in coordinating the activities and projects in ESD.

The host universities had enabled the partner institution /organizations' involvement in sustainable community work or partnerships at local and regional levels. This was the view of an overwhelming majority of the respondents represented by 28 (96.7%) respondents with only 3.3% disagreeing. On the same note the researcher asked the respondents whether their institution/organization benefited as a partner in the RCE through collaboration on sustainability events such as clean-ups, tree planting and ESD seminars/workshops facilitated by the host university. This appeared to be the case as 29 (96.3%) respondents overwhelmingly agreed with the statement.

Sharing of information within the RCE is vital in keeping the partners abreast of ESD undertakings within its own network and others in the region. To this end, the respondents were asked whether their institution/organization benefited as a partners in the RCE through publicity of partner initiatives through the host universities. This appeared to be true as it was variously agreed upon by 27 (85.9%) of the respondent. Only 3.3% disagreed while 6.7% were undecided. This indicated that the host

universities were largely ensuring that information on ESD activities and events in the RCE was able to reach all partners and stakeholders through the RCE coordinators who also happen to be lecturers in the same universities. These findings are similar to those of Dahms, Mcmartin & Petry [14] in their study report of RCE Saskatchewan which has made significant progress in advancing and setting up direct connection among foundations of higher learning and with network associations. Participation of local communities was found to be a key element of the RCE Saskatchewan model, to harness strengths toward educational innovation for enhancement of ESD.

The results are in agreement with a report by Rickers & Hermans [9] on RCE Rhine Meuse hosted and coordinated by Zuyd University of Applied Science. They indicate that the host university's effective management of collaborations practice had up scaled the integration of ESD into formal and non-formal education practices through exchange of knowledge between various institutions, local authorities and companies.

4.4 Thematic Analysis on RCE Collaborations Practice Implementation on Education for Sustainable Development

The analysis was done to support the responses adduced from the Likert questions. The analysis was done from findings collected from open-ended questions in the questionnaires and document analysis. The information obtained was organized into similar themes and reported in narratives.

From the open-ended questions in the questionnaire for coordinators and lecturers of the RCE host universities required the respondents to suggest recommendations that they would offer to continuously strengthen collaboration links within the RCE in order to enhance ESD activities and programs. Responses adduced covered a wide array of areas and themes. Some of the respondents felt that there was a need to integrate national development objectives in the collaboration links strategy in order to align the ESD activities and projects of all the stakeholders with the national ESD agenda. Others cited the need for host universities to be more aggressive in creating links among partners that have common goals in order to achieve synergy in the operations and activities within the RCE network. Grassroots stakeholders like farmers and students need to be incorporated in the planning and implementation of all ESD programs. This has been found to be successful in other RCEs such as RCE Saskatchewan [14].

On the successes of the implementation of RCE collaborations on ESD that had enabled the host university to promote ESD activities and projects, the respondents cited a number of joint projects with stakeholders. These included tree planting, creation of botanical gardens, clean-ups, joint conferences and workshops, ESD capacity building meetings, awareness creation in schools among others. The researcher was able to witness some of the projects such as tree nurseries, planted trees and botanical gardens in the host university and partner institution campuses. Document analysis also showed evidence of activities like joint conferences/workshops, awareness creation programs through minutes of meetings and other documentation relating to the activities which were availed by the RCE coordinators. The findings relate to those of a study on RCE Makana which reports how successful implementation of RCE collaborations practice on ESD by Rhodes University has resulted in similar ESD activities and projects in the RCE [13].

There were also several challenges in the implementation collaborations practice on ESD activities and projects that were brought forward by the respondents regarding creation and maintenance of collaborations in the network. The challenges that were common to all the three host universities included a shortage of joint ESD researches/projects to benefit

stakeholders, lack of enthusiastic involvement and participation by stakeholders in RCE activities and lack of commitment. Other challenges cited were lack of funding to support collaborative ESD activities and a lack of understanding of ESD. This view was in line with a paper by Ndaruga [15] who noted that many RCEs had not mobilized stakeholders appropriately, arguing that they lacked funds to convene stakeholder meetings.

Some respondents also reported that there was a lack of proper understanding of the RCE and ESD concept by members which led to the failure to meet the expectation of members who joined the RCE. This also posed the challenge of sustaining membership in the RCE. To add on to this it was also echoed that the RCE concept and its role in transforming the host universities, partners and the surrounding community was largely unknown to the universities' community and the people outside the universities. Some respondents also had the view that the absence of a clear structure of collaborations with ESD players was a hindrance to smooth networking in the RCE. Necessity of multi-stakeholder meetings and initiatives to minimize institutional conflicts was also advanced.

This statement by one of the respondents aptly summarized the views of partner institutions on RCE collaborations.

'The RCE networks convenes a diverse group of stakeholders from different sectors of ESD practice (academia, government, private sector, civil society) thus making it a formidable force in developing long-term change projects and mobilizing enough resources to implement them. Yet, the RCEs are still crippled with dormancy (inactivity due to a dire lack of activities) as members continue to operate in silos as if they are not part of the network. They are largely waiting for the Host University and NEMA to invite them for meetings and activities'.

Accordingly, this has hampered the successful implementation of ESD projects in the host universities and RCE collaborating institutions/organizations.

In order to corroborate some of the information gathered from the questionnaires, the researcher analysed documents relating to partnerships in the RCE. Documents analysed included minutes of RCE meetings, records of communications

between host and partners, records of seminar/workshop proceedings and activities. The general information gathered from the three RCEs showed that the types of collaboration were mostly lateral links between educational organizations and organizations that may not be part of the formal education but participate in promoting ESD. Records analysed revealed that the host universities facilitated RCE stakeholders' meeting once or twice a year or on demand to deliberate on issues pertaining to implementation of ESD activities and projects. There was also documented evidence of collaborative RCE activities such as public awareness creation on ESD and environmental sustainability in collaboration various stakeholders. This documented evidence gave credibility to the information obtained from questionnaires pertaining to implementation of RCE collaborations practice on ESD activities and programs.

Responses from the interview schedule with RCE coordinators revealed that the host universities had played a major role in the formation and strengthening of stakeholder linkages. One of the respondents averred that -:

"The university has played a major role in bringing together strong institutions in the region that are like minded." Another one noted that *"holding conferences and workshops jointly with stakeholders has enabled us to share information on ESD best practices. The host university helps to facilitate these meetings by providing venues and refreshments."*

The good collaboration with NEMA in providing guidance and technical support was hailed across the board. The responses clearly indicate that the host universities need to upscale institutional management of RCE collaborations practice by creating more lateral, horizontal and vertical collaborative links in the networks in order to effectively widen the scope of ESD activities and programs in their regions [8].

On what ails implementation of RCE collaborations practice on ESD, responses clearly pointed to the need for host universities to be more proactive in bringing more partners on board in order to widely create awareness on ESD and SD. One respondent intimated:-

"Host universities need to be more aggressive in achieving links that have

common goals holding multi-stakeholder meetings and initiatives to minimize institutional conflicts in the RCE."

Another respondents decried the role of RCE collaborations noting that

"There is lack of involvement and commitment by the various stakeholders. There are those who thought that there would be financial and material benefit by being members of the RCE but are now disillusioned thus leading to lack of enthusiasm in the activities."

Another respondent noted that:-

"Some of the stakeholders are just members by name since they do not understand what ESD is and how it can benefit them. They are therefore not keen on the programs and activities therein."

4.5 Mixing and Interpretation of Data on Collaborations Practice implementation on Education for Sustainable Development

From the descriptive and thematic analysis of RCE collaborations practice implementation on ESD activities in host universities of RCEs it was found out that despite many challenges, the host universities had fairly managed the formation and sustenance of a number of RCE collaboration links which had enhanced the level of ESD activities and programs. This was evident from the descriptive analysis as well as thematic analysis carried out from the various data collection instruments used.

Both the descriptive and thematic levels of analysis revealed that most of the active links that existed were lateral and vertical links with very few horizontal links if any. It was noteworthy that the management of host universities in sustainable community work was overwhelmingly evident from the questionnaires, document analysis and observation guide in all the three RCEs in the study. Escrigas, Polak and Jegede [19] affirm these findings by stating that sustainable institutions supports sustainable community development in its local area and in the surrounding region through projects and partnerships. Their study also established that 57.5% of HEIs in the study are involved in sustainability partnerships with a variety of local partners.

The host universities were also commended for enhancing ESD activities and programs through facilitation of conferences and workshops in the RCEs. However both the descriptive and thematic analysis revealed that the ESD activities in the network were hindered by a lack of clear structures of collaborations with ESD players as well a lack of understanding about ESD and RCE concept. This is in agreement with a case study of RCE Greater Sendai area of Japan which reported that the overwhelming majority of Japanese people do not even know what ESD is, or what 'sustainable development' means [11,20]. The host universities therefore need to sensitize both the university and local communities on ESD and the role of RCEs in promoting sustainable livelihoods.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Although the host universities' management had supported formation of collaboration networks in the RCE, most of the partners were just dormant and did not take part in RCE activities. This was a result of a lack of understanding of the RCE/ESD concept by most of the partners who had agreed to come on board. The host universities could play a major role to manage the establishment of clear structures of collaborations with ESD players to promote ESD activities and programs in the region. The findings indicated that the management of host universities and RCE secretariat had not done enough to promote programs to create awareness about the RCE concept as well as the meaning of education for sustainable development. Minimal joint programs and activities between member partners and between different RCEs were reported. Respondents felt the need for enhanced youth mobilisation and empowerment to make the RCE Youth League more vibrant [21].

5.2 Recommendations

Host universities should be more intentional in creating awareness on RCEs and ESD through university community outreach programs in order to build capacity in social learning and networking on ESD. Though the introduction of a competence-based curriculum (CBC) at lower levels of primary education is employing learner-centred pedagogies consistent with ESD, the

Ministry of Education could consider sponsoring more awareness creation programs to sensitise other levels of education on the principles of ESD and SD.

Research findings point to the need for host university management and leadership to be more aggressive in creating lateral, horizontal and vertical collaborative links to bring more ESD actors on board. They may accomplish this by being more intentional in creating awareness on RCEs and ESD through university community outreach programs. Facilitation of more frequent RCE stakeholder meetings and joint projects that benefit them may help to boost enthusiastic involvement and commitment in the network. It is also suggested that the host universities could enable the creation of a bridge for linkages between higher institutions of learning, tertiary institutions, formal and non-formal bodies by establishing business and innovation incubation centres to tap, develop and market ideas through partnerships and collaboration among member organizations. Expansion and strengthening of RCE networks would be important for building capacity in social learning and networking on ESD implementation.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. UNU. Regional Centers of Expertise in Education for Sustainable Development; 2002. Retrieved from www.ias.unu.edu
2. UNU. Overview of the RCE on ESD network. United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS); 2004.
3. Bliss H. Institutional Management. Wisegreek, Conjecture Cooperation; 2020.
4. Johnson A. Higher education for sustainable development – Final report of International Action Research Project. Forum for the Future; 2007.
5. Mochizuki Y, Fadeeva Z. Regional Centres of Expertise on Education for Sustainable Development: An Overview. *International Journal of Sustainability in Higher Education*. 2008;9(4):369–381.
6. Fadeeva Z. "From centre of excellence to centre of expertise: regional centres of expertise on education for sustainable

- development", in Wals, A.E.J. (Ed.), *Social Learning Towards a Sustainable World: Principles, Perspectives, and Praxis*, Wageningen Academic Publishers, Wageningen; 2007.
7. Ofei-Manu P, Shimano S. *Capacity Building for Sustainable Living through ESD-Based Learning in a Regional Centre of Expertise (RCE)*; 2012.
 8. Brown F, Meyer J, Diethart M. *Managing Regional Centres' of Expertise Collaborations with Stakeholders including Higher Education Institutions: A Case Study Review*. *Sustainability Accounting, Management and Policy Journal RCE Graz-Styria*, University of Graz, Graz, Austria. 2013;4(3):328-343.
 9. Rickers J, Hermans J. *Regional Center of Expertise (RCE) Rhine-Meuse: a cross-border network*. RCE Rhine-Meuse, Kerkrade, The Netherlands; 2008.
 10. Rikers J, Hermans J, Eussen J. *Building RCE Rhine-Meuse*; *Journal of Education for Sustainable Development*. 2010;4(1):93-104.
 11. Mochizuki Y. *Articulating a Global Vision in Local Terms: A Case Study of a Regional Centre of Expertise on Education for Sustainable Development (RCE) in the Greater Sendai Area of Japan*. UNU-IAS Working Paper No. 2005;139
 12. UNU. *RCE Bulletin*. 2010;12.
 13. O'Donoghue R. *RCE Makana: Towards a Change Practices Approach to enhance Sustainable Livelihoods in Makana*. UNU-IAS, Yokohama, Japan; 2014.
 14. Dahms T, McMartin D, Petry R. *Saskatchewan's (Canada) regional centre of expertise on education for sustainable development*. *International Journal of Sustainability in Higher Education*. 2008;9(4):382-401.
 15. Ndaruga A. *National coordination challenge for RCEs: Lessons from Kenya*. National Environment Management Authority, Nairobi; 2014.
 16. Creswell J. *Research design: qualitative, quantitative, and mixed approaches (2nd ed.)*. Thousand Oaks, CA: Sage Publications, Inc; 2003.
 17. Weaver K, Olson JK. *Understanding the paradigms used for nursing research*. *Journal of Advanced Nursing*. 2006;53:494-469.
 18. Natori Y. *Role of Higher Education in Developing Regional Centres of Expertise (RCE) on Education for Sustainable Development*. Session 6E 11th UNESCO-APEID International Conference; 2008. Retrieved from: www.ias.unu.edu.
 19. Escrigas C, Polak E, Jegede O. *The Promotion of Sustainable Development by Higher Education Institutions in Sub-Saharan Africa*, Survey Report. Guni, IAU and AAU joint publication; 2011.
 20. De Vaus D. *Research Design in Social Research*. London: SAGE; 2001.
 21. Schwarz J, Ryan E. *RCE Hamburg: Network KOMZET Building and Energy – Safeguarding the future through sustainability in vocational education*. UNU-IAS, Yokohama, Japan; 2014.

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