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**Thirteen session of African Ministerial Conference on the Environment**

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**Report on implementation of Decision-6 (AMCEN-12)**

*Background*

This report summarizes progress made on the implementation of Decision 6 (Environmental Education and Technology-supported Learning) which was endorsed at the 12<sup>th</sup> Session of AMCEN (see Annex I). Paragraph (f) of this decision called for an interim report to be presented to AMCEN-13 in 2010 with the final report due for presentation to AMCEN-14 in 2012. The report explicitly covers both the environmental education (Section 3) and eLearning (Section 4) components of Decision 6 whereas other sections of the report combine both aspects in an integrated manner.

Overall, a considerable amount of progress has been made in the two-year period since AMCEN-12. A major survey on the status of environmental education and technology-supported learning was conducted and the findings are presented in section 1. A number of strategic partnerships have been established (see section 2) and some progress has been made in the area of South-South collaboration (see section 3).

Building upon the results of the survey, UNEP developed programmes to strategically take forward environmental education and Education for Sustainable Development in Africa. This was through capacity building, curriculum review, development of new courses, research and South - South collaboration amongst African universities themselves as well as linkages with Asian and Caribbean universities. The UNEP's Mainstreaming Environment and Sustainability in African (MESA) Universities Partnership, has been a major springboard in this process.

The backbone of the Pan-Africa eLearning for Environment Network has been established (see section 4.1 and Annex II) and 18 countries are participating in the network. Capacity development and training has been conducted as described in section 4.2. Many awareness-raising activities have been carried out as outlined in section 4.3.

However, the issue of donor support for the implementation of the broad spectrum of activities embraced by the decision continues to be the main challenge facing African countries, UNEP, international partners and other stakeholders collaborating to implement various aspects of this important decision. One case study focused on Kenya showing the impact of the decision at national level is presented in Annex III and this example demonstrates the potential impact that the decision can have in other African countries.

**Section 1: Pan-African Survey**

The survey was undertaken in response to para (a) (i) of Decision 6 (see Annex I for full text of decision).

Action (a) To encourage Governments, through their principal environmental authority, to facilitate interministerial cooperation to undertake, among other things, the following key actions in the area of environmental education and technology-supported learning:

(i) An assessment of existing environmental education strategies, needs and challenges facing Governments in the area of technology-supported learning;

UNEP and the Common-Sense eLearning consultancy conducted an online survey to assess the current status of environmental education and technology supported learning within African institutions working in the areas of environmental protection and sustainable development. The survey was made available online in two languages:

English (<http://www.surveyconsole.com/console/TakeSurvey?id=526331>), and French (<http://www.surveyconsole.com/console/TakeSurvey?id=544404>).

The survey was conducted for four months from early February to May 2009 and by the end of the survey, the online questionnaire was viewed 2380 times. In total, 550 complete responses were received from 45 countries, 370 responses in English and 180 responses in French.

## 1.1 Key Findings of Pan-African survey

The main findings of the survey are summarized below. The results were presented in UNEP's preconference workshop at the eLearning Africa Conference in Dakar, Senegal on 27th May 2009 and helped to revitalize and strengthen relevant strategies, programmes and action plans, and establish new initiatives on environmental education and technology supported learning. The results of the survey can be found online in the following link:

[http://www.unep.org/mentor/Africa/Selected\\_Survey\\_Results.pdf](http://www.unep.org/mentor/Africa/Selected_Survey_Results.pdf)

### Environmental Education (EE) Findings

- The survey results showed that there were a large number of activities in the field of environmental education on all education levels (primary through tertiary and informal) throughout Africa.
- The results showed further that a large number of the organizations offering such activities had an Environmental Education Strategy in place.

### Technology Supported Learning (TSL) Findings

- The results showed that there were only minor differences between francophone and Anglophone regions, apart from eLearning/TSL activities carried out at that time. Here, the francophone regions were trailing behind.
- In the Anglophone regions, roughly 50% of all responding organizations were conducting online or eLearning/TSL activities. In francophone regions, roughly 30% conducted online or eLearning/TSL activities.
- The responding organizations used eLearning/TSL for different target audiences. It was mostly used for staff development (internal target audiences and outreach).
- More than 70% of all responding organizations had no eLearning/TSL strategy in place.

- Most organizations did not have their own eLearning/TSL teams and required outsourcing of activities.
- To further support the development and deployment of eLearning/TSL activities, African organizations required further assistance in the field of technology, strategy and programme implementation.
- Most eLearning/TSL activities were funded internally. For sustainable eLearning/TSL measures, African organizations for environmental training needed more sustainable funding sources.

The results of the survey were used to guide the following two actions called for in Decision 6.

Action (a)(ii) - *The development of a strategic approach to mainstreaming environmental education across all relevant governmental institutions, including the design of programmes suitable for the primary, secondary and tertiary education sectors; and fostering cooperation with the non-formal education sector*

Action (a) (iii) – *The development of an action plan for technology-supported learning in conjunction with the Human resources, Science and Technology Department of the African Union (including e-learning) in follow-up to the strategic approach.*

Paragraph (b) of Decision 6 calls upon UNEP to provide strategic guidance and technical advisory services on the implementation of the aforementioned activities. (To request the Executive Director of the United Nations Environment Programme to provide strategic guidance and technical advisory services on the implementation of the above-mentioned activities and multilateral development partners to provide financial and technical assistance to build the capacities of African countries in this respect)

## **Section 2: International strategic partnerships**

The following strategic partnerships were developed during the reporting period.

### **InWEnt (Capacity Building International, Bonn)**

In 2008 a general framework agreement was signed between UNEP and InWEnt. Technology supported learning and support to Africa is one component of this agreement. Under the agreement, a number of basic eLearning training courses have been conducted in East, West and Southern Africa. The agreement has also supported both North-South and South-South collaboration in that InWEnt support KeLC and NOLnet who are also UNEP partners.

### **International Conferences, Workshops and Exhibitions (ICWE, Berlin)**

No framework agreement has been signed with ICWE but a number of smaller contracts have been agreed and executed. UNEP's collaboration with ICWE centres on support to two major eLearning conferences – eLearning Africa and Online Education. As of 2009 an environment track has been embedded in both conferences. With effect from 2009, alumni that have undergone training and contributed substantially to the implementation of Decision 6 have been invited as speakers and have made presentations in the environment track at eLearning Africa. In addition, a special 1-day pre-conference seminar on the development of the Pan-Africa eLearning for Environment Network has been integrated with eLearning Africa with effect from 2008.

## **United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris)**

In April 2009 a framework agreement was signed between UNEP and UNESCO and one component of this agreement is focused on environmental education and technology-supported learning. UNESCO has the lead within the UN system on eLearning as a result of the 2003/5 World Summit on the Information Society. UNESCO also assisted UNEP in conducting the survey referred to in Section X above of this report.

## **Centre for Environment and Development in the Arab Region and Europe (CEDARE, Cairo)**

UNEP has a long history of collaboration with CEDARE under various agreements. In addition to being a centre of excellence on environment and development, the Centre has expertise in the development of eLearning content and the delivery of eLearning courses in Arabic, English and French. CEDARE is the designated hub for North Africa in the Pan-Africa eLearning for Environment Network.

## **Section 3: Environmental Education component of Decision 6**

### **3.1 United Nations Decade of Education for Sustainable Development (UNDESD)**

UNEP has strengthened its collaboration with UNESCO and the United Nations University in promoting the UNDESD in African countries. This collaboration includes the development of an ESD implementation strategy in Kenya, Capacity building programmes for university leaders Uganda in collaboration with the National Environmental Protection Authority; training for representatives of 93 Nigerian universities on ESD in collaboration with the National University Commission. In collaboration with the Swedish International Development Agency (SIDA) and Ramboll Natura, UNEP offered the 2<sup>nd</sup> International Training Programme (ITP) on Education for Sustainable Development in Higher Education to 28 participants from 12 African countries.

As a result, alumni to the programme are offering technical support to their co-participants in the programme as they implement their change projects. For instance, Multimedia University is now offering support to the Mbarara University of Science and Technology, Uganda as they re-orient teaching strategies for pre-service science teachers towards achieving Education for Sustainable Development. Jomo Kenyatta University of Science and Technology (JKUAT) in Kenya assisted by the National Environment Management Authority (NEMA, Kenya) developed the university's draft ESD policy that seeks to integrate environment and sustainability into all aspects of university activities. The policy has been approved by the university senate and is awaiting approval by JKUAT's University Council.

To strategically mainstream ESD in universities, and in collaboration with Southern African Development Community Environmental Education Programme (SADC-REEP), 3 MESA Professorial Chairs have been established as follows:

- a. University of Botswana MESA Chair will focus on Curriculum and Development and Policy issues in ESD.
- b. University of Swaziland MESA Chair will be working in the area of community service. Community here is defined to mean rural and industry entities i.e. activities in ESD outside the universities.
- c. University of Zambia MESA Chair will be dedicated to Teacher Education in ESD.

The Chairs will also promote UNEP's thematic areas.

### **3.2 Mainstreaming Environment and Sustainability**

As an offshoot of UNEP's MESA partnership programmes, the University of Botswana is introducing a Masters Degree in Environmental Education, the University of Zanzibar has added a module on sustainable development into the Development Studies curriculum, and is re-orienting the law curriculum to integrate community issues relevant to sustainable development issues. The University of Cape Town has restructured the environmental law curriculum to ensure a wider perspective on environmental law as well as access to environmental law modules for more university students. The Department of Agricultural Economics in the University of Nairobi has re-oriented the curriculum to include a stronger focus on environmental sustainability, as it was previously based only on economic and some social aspects of agriculture.

At the Obafemi Awolowo University sustainable development issues are being mainstreamed into four programmes in the Humanities and the University of Seychelles is in the process of establishing a core module on Sustainable Development of Small Island States. The University of Seychelles was recently established and the module on Sustainable Development of SIDS and those in Africa in particular has been developed and will be offered as the university expands.

In addition, the Engineering faculty at the University of Mauritius is researching technologies for composting paper waste and providing more sustainable energy resources for Mauritius. The Zambian National Institute of Public Administration (NIPA) is using a Trainer of Trainer approach for their staff to introduce sustainability criteria into curricula and pedagogy for certificate and diploma programmes and to promote research activities and develop training in pedagogical innovation on sustainability for teaching staff.

Through technical support from UNEP, the Rivers State University of Science and Technology, Nigeria, held a training workshop for 12 higher education institutions in their localities. The workshop was attended by the Vice Chancellors, Rectors and Heads of educational institutions in Rivers State, Nigeria. The participating institutions committed to developing an environmental policy for teaching, research, community engagement and administration for their institutions. A copy of the UNEP Toolkit on Education for Sustainable Development innovations for African universities was reproduced for all the participating institutions, at their own cost, to make it responsive to Nigerian needs.

Subsequently, UNEP and its partners held the First Sustainability Generation workshop to provide a forum for college students in Africa to engage creatively and innovatively with students from other regions on current environment and sustainability challenges as well as to contribute to the realization of MESA objectives. The outcome was the development of policy recommendations for the incorporation of environmental sustainability in institutions of higher learning with a focus on climate change. As an offshoot of the InterVarsity Environment Network that was launched at the Sustainability Generation Workshop, the African Youth Initiative on Climate Change (AYICC)<sup>1</sup> was set up as an umbrella initiative of all youth organizations in Africa working on climate change, to link, and share knowledge, ideas, experiences, skills and strategies on youth action around the continent on climate change mitigation. Universities were identified as key partner institutions in translating scientific and indigenous knowledge into concrete actions/projects.

### **3.3 South-South Collaboration**

UNEP/Tongji Institute of Environment for Sustainable Development in Shanghai China has commenced a Master's and Doctorate programme on Environmental Management and Sustainable Development. Key beneficiaries are African Countries. The Center also promotes south south collaboration through linkages with members of the MESA partnership. In addition UNEP environmental education programme continues to create fora that bring together African universities to share and exchange best practices as well as collaborate on research and the development of new courses and tools. Examples are the Climate Change Education Project which brought together universities from Africa and Sweden<sup>5</sup> to

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<sup>1</sup> [http://unfccc2.meta-fusion.com/kongresse/090601\\_SB30\\_Bonn/download/090610\\_Mwaura.pdf](http://unfccc2.meta-fusion.com/kongresse/090601_SB30_Bonn/download/090610_Mwaura.pdf)

develop an educational programme on climate change and to frame a research programme for these universities on the same topic. Papers from the workshop will be published in the Southern African Journal of Environmental Education in March 2010. This programme was hosted by the University of Zambia in February 2010.

Further in response to the decision, Kenyatta and Nairobi Universities, (Kenya), University of Stellenbosch (South Africa and University of Ghana (Ghana), in collaboration with UNEP, UN-Habitat, UNESCO, United Nations University (UNU), Asian Institute of Technology as well as Tokyo and Yokohama national universities in Japan, are collaborating to develop Master of Science in Community Innovations for Sustainable Urban Livelihoods (ESDA Course). It is being developed as a hands-on/learning-by-doing Master's programme, with environmental sustainability at the urban community level as its main theme.

## **Section 4: eLearning Component of Decision 6**

### **Section 4.1: Network Building**

#### **Sub-regional hubs**

UNEP's Capacity Development Branch based in the Division of Early Warning and Assessment (DEWA) was responsible for catalyzing, supporting and coordinating all proposed actions under paragraph (a) (iii) of Decision 6. As proposed in paragraph (d) UNEP has been supporting the development of strategies to mainstream technology supported learning and development of terms of reference and action plans for the hubs and national centres (See Annex II). Finally, paragraph (h) of the decision provided an overarching framework for multilateral institutional cooperation on eLearning across Africa and UNEP has engaged several international partners to support the sub regional hubs and the national centres.

a (iii) The development of an action plan for technology-supported learning in conjunction with the Human Resources, Science and Technology Department of the African Union (including e-learning) in follow-up to the strategic approach.

(d) To constitute a small group of members of the African Ministerial Conference on the Environment to undertake, on a trial basis, the development of 1–2 year pilot action plans for technology-supported learning.

(h) To invite countries to establish an African environmental e-learning network to share expertise, best practices and content and to identify a coordinating hub.

For the purpose of coordinating and implementing programme activities, UNEP has divided Africa into 6 sub-regions namely Northern Africa, Western Africa, Eastern Africa, Central Africa, Southern Africa and the Western Indian Ocean Islands. In addition, Africa has four major linguistic groups – English, French, Arabic and Portuguese – therefore it was important that collectively the sub-regional hubs can also cover these four languages.

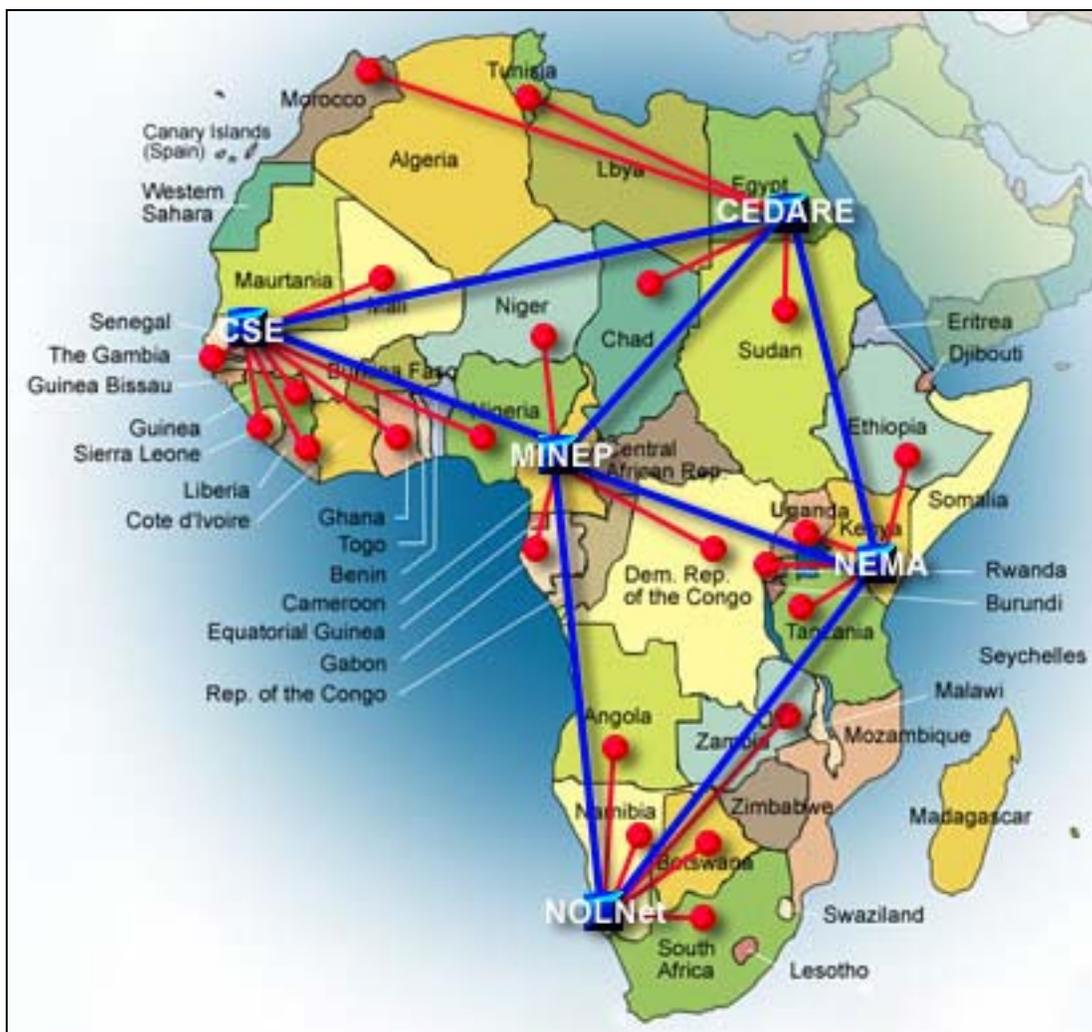
The sub-regional hubs are responsible for developing sub-regional networks as shown schematically in the map below. The hubs are supporting mechanisms for national eLearning centres in the sub-regions.

#### **National eLearning centres**

A national eLearning Centre is a coordinating mechanism for eLearning development and, in broad terms, its catalytic and coordinating role would include: strategic advice, guide eLearning agenda, Review best practice, quality assurance, and policy formulation.

Some of the reasons for establishing an eLearning Centre include the need to learn about the know-how, best practices, and rules of thumb of implementing eLearning when new organizations enter the eLearning field. Many institutes/organizations that think of taking the step to implement technology supported learning environments face the problem of not knowing where to start from, or what to do. Instead of re-inventing the wheel, there is need to take advantage of the expertise and know-how of existing eLearning centres. To make effective use of eLearning methods, and to meet the changing educational needs, many organizations have to find ways of identifying and sharing best practices, collaborating in the exchange of competence, experiences, 'lessons learnt', tools and materials.

For detailed terms of reference for the regional/sub regional hubs and the national centres, see annex II.



**Fig 1: Status of development of Pan-Africa eLearning for Environment Network in 2010**

The following table shows countries/institutions volunteered to form sub regional eLearning hubs and the national eLearning centres.

Region	Country	Name of Institution	Regional Hub/National Centre
North Africa	Egypt	Center for Environment and Development for the Arab Region and Europe (CEDARE)	Sub-regional
Central Africa (Francophone)	Cameroon	Centre for Biodiversity and Sustainable Development (CBSD)	Sub-regional
		Ministère de l'Environnement et de la Protection de la Nature (MINEP)	National
West Africa (Anglophone)	Ghana	Environmental Protection Agency (EPA)	Sub-regional
	The Gambia	Environmental Protection Agency (EPA)	National
West Africa (Francophone)	Senegal	Centre Suivi Ecologique (CSE)	Sub-regional
	Nigeria	Ministry of Environment	National
	Mali	Technique Permanent du Cadre Institutionnel de la Gestion des Questions Environnementales / Ministère de l'Environnement et de l'Assainissement (STP/CIGQE/MEA)	National
	Liberia	Environmental Protection Agency (EPA)	National
	Guinea	International Education Resource Network	National
	Sierra Leone	Environmental Protection Agency	National
Eastern Africa	Kenya	National Environment Management Authority (NEMA)	Sub-regional
	Uganda	National Environmental Management Authority (NEMA)	National
Southern Africa	Namibia	Namibia Open Learning Network Trust (NOLNet)	Sub-regional
	Zambia	National Environmental Council of Zambia (NECZ)	National
Western Indian Ocean Islands	Seychelles	Ministry of Environment	Sub-regional

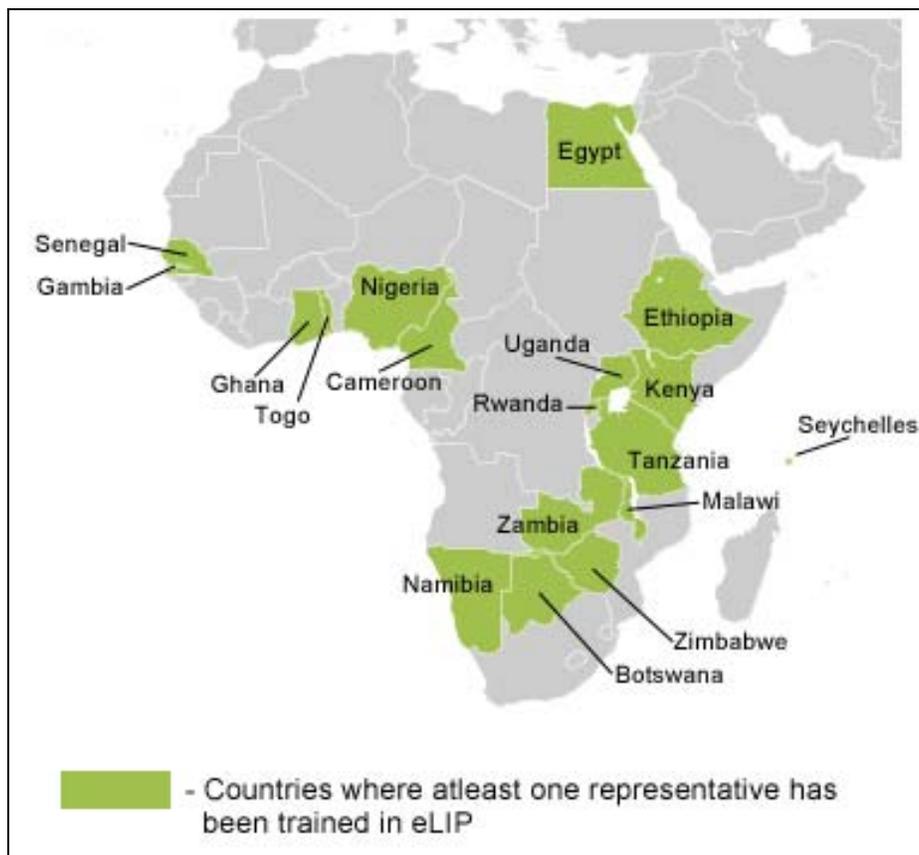
## Network Coordination

During the seminar in Dakar at the 4<sup>th</sup> eLearning Africa workshop attended by participants from 16 African countries, a working paper entitled Implementation of Decision 6 of AMCEN-12 – current progress and proposed actions was presented to the meeting. In response to paragraph (d) of the decision, several countries volunteered to participate either as sub regional hubs or as national eLearning centres. UNEP was requested to coordinate the running of the hubs in the interim and later a steering committee comprising of UNEP and the sub regional hubs would be established to coordinate the hubs.

## Section 4.2: Capacity Building and Technology Support

(c) To request the United Nations Environment Programme and the United Nations Educational, Scientific and Cultural Organization and other partners concerned to strengthen their cooperation within the framework of the United Nations Decade of Education for Sustainable Development in order to provide their technical support and expertise to African countries to implement effectively and develop e-learning on environmental education for sustainable development;

In response to AMCEN decision 6 para c requests UNEP and other partners to provide technical support and expertise to African countries to implement effectively and develop e-learning on environmental education for sustainable development. In response, UNEP organized a series of training workshops 'eLearning in Practice (eLiP) between 2008 to date. There were six basic training courses on elearning covering a total of 18 countries and 6 sub-regions.



**Fig 2: 18 Countries that have participated in eLiP training workshops in Africa**

## **2008: eLearning in Practice (eLiP) East Africa**

The first eLearning in Practice (eLiP) course for environmental institutions in East Africa (Kenya, Uganda, Tanzania and Rwanda) was organized in April 2008 by UNEP in cooperation with InWEnt (Capacity Building International) and its partner organizations NOLNet and KeLC.

## **2008: eLearning in Practice (eLiP) West Africa**

The second eLiP course for environmental institutions was targeted towards Anglophone countries in West Africa. The training was held in Accra, Ghana between 26 and 27 May 2008. Organised by UNEP in cooperation with Environmental Protection Agency of Ghana (EPA) with tutor support from InWEnt and facilitators from NOLNet, KeLC and UNEP. Participants in the training were drawn from Cameroon, Gambia, Ghana, Nigeria and Togo; other countries such as Botswana and Ethiopia were also involved in the training. Under this partnership, UNEP organised a one-day seminar entitled [Mainstreaming eLearning for Environment](#) as a pre-conference event at eLearning Africa 3 in Accra, Ghana on 28 May 2008. The seminar addressed various aspects of capacity building (agenda) (participants) needed to mainstream eLearning into the work of national environmental authorities across Africa. The main outcome of the meeting was a call for a pan-African network on eLearning for the Environment as described in the [Chair's summary](#).

## **2009: Green eLearning in Practice (eLiP) Africa**

The third eLiP course for environmental institutions was held in Dakar, Senegal on 25-26 May 2009. This training was organized by UNEP in cooperation with Centre Suivi Ecologique of Senegal (CSE) with tutor support from InWEnt and facilitators from NOLNet, KeLC and UNEP.

UNEP in cooperation with InWEnt (Capacity Building International) and its partner organizations in Africa, namely the Namibian Open Learning Network Trust (NOLNet), and Kenyan eLearning Center (KeLC) started the twelve week-long blended learning course Green eLearning in Practice (eLiP) with a face-to-face workshop in Dakar, Senegal 25-26 May 2009 at Centre de Suivi Ecologique. 15 participants from environmental institutions in Senegal enrolled in the course. The course program introduces educators, instructors and managers implementing training programmes in African environmental authorities to the concept of eLearning.. Four online modules and a case study provide an in-depth and practical insight into the preparation and delivery of eLearning from four different angles - that of an eLearning Manager; Instructional Designer; Content Developer; and Online Tutor.

In addition, UNEP in cooperation with International Conferences, Workshops and Exhibitions (ICWE GmbH, Berlin) organised a one-day seminar entitled Technology-Supported Learning for Environmental Education in Dakar, Senegal on Wednesday 27th May 2009. The seminar was a pre-conference event affiliated with the 4th International Conference on ICT for Development, Education and Training.

The seminar was attended by participants from 16 African countries and the agenda addressed the implementation of decision 6, particularly the establishment of the Africa Environmental eLearning Network. A working paper entitled Implementation of Decision 6 of AMCEN-12 – current progress and proposed actions was presented to the meeting along with a set of proposed actions for endorsement. The [Chair's summary](#) describes the main outcomes of the meeting which included the identification of sub-regional hubs and national centres of the Africa Environmental eLearning Network and a list of volunteer countries that will develop eLearning strategies and action plans. A [press release](#) was issued by UNEP to inform all potential stakeholders of the outcome of the seminar.

## **2009: Green eLearning in Practice (eLiP) Training Workshop for sub-regional Hubs, Africa**

In 7-9 December 2009, UNEP and its partners started a twelve week-long blended learning course Green eLearning in Practice (eLiP) with a face-to-face workshop in Nairobi, Kenya. 20 participants from environmental institutions in Africa enrolled in the course. Participants were drawn from Kenya, Egypt, Zambia, Uganda, Ghana, Democratic Republic of Congo and Seychelles. The course program introduces educators, instructors and managers implementing training programmes in African environmental authorities to the concept of eLearning through the medium of eLearning. Four online modules and a case study provide an in-depth and practical insight into the preparation and delivery of eLearning from four different angles - that of an eLearning Manager; Instructional Designer; Content Developer; and Online Tutor. The course is currently on-going and is expected to be completed by the end of March 2010.

## **2009: eLearning Sensitization Workshops, Nairobi, Kenya**

At the local level, UNEP is collaborating with [NEMA-Kenya](#) (National Environment Management Agency) to sensitize environmental institutions within Kenya on the use of Technology Supported Learning (TSL). Currently, eleven meetings on eLearning awareness have taken place in different environment institutions during the months of October and November, 2009; with each session having an average of 25 participants. These institutions are:

1. Ministry of Environment and Mineral Resources
2. [Kenya Meteorological Department](#)
3. [Department of Resource Surveys & Remote Sensing \(DRSRS\)](#)
4. [Department of Mines & Geology](#)
5. [Kenya Forest Services](#)
6. [National Museums of Kenya](#)
7. [Kenya Bureau of Standards](#)
8. [University of Nairobi](#)
9. [Jomo Kenyatta University of Agriculture & Technology](#)
10. [National Environment Management Authority](#)
11. Kenya Industrial Research & Development Institute (KIRDI)

## **2010: Green eLearning in Practice (eLiP), Southern Africa Region**

eLearning Africa 5 will take place in May 2010 in Lusaka, Zambia. The training is targeted towards environmental institutions in the Southern Africa region drawing upon Zambia, Zimbabwe, Botswana, Namibia and Malawi.

## **South – South Cooperation**

The Bali Strategic Plan is now considered the cornerstone of UNEP's work. It serves as the umbrella framework for "coherent, coordinated and effective delivery of environmental capacity-building and technical support activities" in response to well defined country priorities and needs. The BSP establishes South-South Cooperation as a key mechanism for the implementation of the plan and in particular the achievement of capacity building objectives set forth in the plan. More specifically, *"the plan underscores the importance of South-South cooperation and stresses the need to intensify efforts directed towards institutional capacity-building, including the exchange of expertise, experiences, information and documentation between the institutions of the South in order to develop human resources and strengthen the institutions of the South"*.

South-South Cooperation is now widely recognised as a key mechanism for the development agenda of countries of the South and enjoys broad-based support from both the donor community and

developing countries. According to para 1 of Decision 25/9 on South-South cooperation in achieving sustainable development requests the Executive Director of UNEP to build on the current work and follow-up activities on South-South cooperation and to broaden external consultations to develop strategic partnerships and alliances in support of capacity-building and technology support activities using South-South cooperation arrangements.

In addition, Decision 6 calls for the establishment of a Pan-African e-Learning for Environment Network, to be coordinated through the proposed sub-regional e-learning hubs. This initiative will build on the existing African e-Learning network that has been established out of a partnership between InWent, KeLC, NeLC and UWC of South Africa. Under this partnership, over 600 technical staff from a wide variety of institutions across 10 African countries have been trained in different aspects of e-Learning, from content development, online tutoring, management to technology.

With support from UNEP, this training has been extended to institutions in the environment sector in Africa, further building this pool of regional expertise. This is a good example of South-South cooperation since the training expertise, including administration and logistics are provided by experts from KeLC, NeLC and UWC as the regional implementation partners.

It is expected that with the further implementation of AMCEN decision 6, this pool of expertise will grow exponentially, further spreading the benefits of e-Learning capacity building to more African countries. As an off shoot of this process, a pool of French tutors have already been trained and are now ready to support implementation of the French Version of the eLiP program. This will ensure that Francophone Africa is not left behind and also benefit from these trainings.

### **Suggested approaches for integrating South-South Cooperation dimensions**

- a) Identify and incorporate role of institutions and centers of excellence in the South to harness their potential in the delivery of technology support and capacity building expertise, advisory services, application of South-South solutions, etc.
- b) Stipulate specific provisions to foster institutional linkages & networks to facilitate the sharing and exchange of knowledge, information, expertise, advisory support and services, opportunities for cooperation and collaboration on joint activities.
- c) Incorporate provision to facilitate the identification, generation and dissemination of South-specific best practices and solutions to promote their replication or adoption in other countries and regions of the South.
- d) Liaise and consult with UNDP and other key agencies to build synergies and foster cooperation with their respective work in South-South Cooperation
- e) Develop triangular cooperation partnerships to leverage complementary resources for identified South-South Cooperation activities.
- f) Liaise and consult with on-going South-South Cooperation initiatives (e.g China-Africa Cooperation Forum) to establish collaborative linkages, build synergies, leverage additional support, etc.
- g) Stipulate South-South Cooperation in sub-programme and project documents, proposals, agreements, MoUs, etc.

## Impacts

Through UNEP's capacity building efforts, there are already some positive impacts since the inception of the eLiP training workshops to date.

The most notable impact of this process is the establishment of an environmental track at the e-Learning Africa conference series. This is in recognition of the developments in e-Learning adoption in the environment sector in Africa through the support of UNEP.

The development of TORs for sub regional and national e-Learning centres is well underway. The representatives of the sub regional hubs are in the process of internalizing these TORs and after their training, an online coaching / mentoring process will be instituted to further promote buy in of these TORs. It is expected that an e-Learning centre Tool kit will be the outcome of this mentoring process to further support the establishment and development of the sub regional and national e-learning centres.

Greater support from UNEP partners such as INWEnt in translating their elearning courses into French to address the limitations of language in Francophone countries. This was a major hindrance during the 3<sup>rd</sup> eLiP training workshop in Dakar, Senegal in May 2009. To this end, a pool of French speaking tutors who will support the implementation of the eLiP programme in West Africa have been identified.

At the national level, institutionalization of e-Learning support structures in Government is another outcome of this process. A case in point is Kenya where there have been gradual developments in mainstreaming eLearning to enhance internal capacities, communication and training in environmental institutions, more specifically:

- i. Development of an e-Learning strategy for the environment sector. This is with support of UNEP and KeLC under the AMCEN 6 implementation process in Kenya. This sectoral strategy will be expanded and beefed up to cover other sectors under a national e-Learning strategy.
- ii. The Ministry of Environment has established the Ministerial e-Learning Development Committee (MeLDEC) to co-ordinate eLearning strategy and elearning activities in the environment sector.
- iii. The Ministry of Information and Communications is hosting the National e-Learning Taskforce that will develop the national e-Learning Strategy and implementation plan. This process is a direct outcome of the AMCEN 6 implementation process in Kenya (SSFA between UNEP and KeLC).
- iv. Establishment of the Kenya e-Learning Centre under the Directorate of e-Government. UNEP supported the strengthening of the KeLC environment Pillar, coordinated by NEMA. Through continued capacity building, NEMA now has capacity to coordinate e-Learning developments in the environment sector in Kenya.

## Section 4.3: Awareness-raising and Outreach

Paragraph (a) (i) An assessment of existing environmental education strategies, needs and challenges facing Governments in the area of technology-supported learning.

The survey conducted by UNEP and the Common Sense eLearning consultancy in response to this paragraph of Decision 6 had the added effect of raising awareness on environmental education and technology-supported learning in over 550 African institutions working in the areas of environmental protection and sustainable development.

## Africa Website

A page has been created under the [MENTOR](#) (Marketplace for Environmental Training and Online Resources) website to monitor the progress of Decision 6 and provide information on activities supporting its implementation. The site also provides new open-source software on eLearning that can be utilized by African institutions. The page is accessible at the following URL: <http://www.unep.org/mentor/africa/>

## Conferences and Seminars

UNEP liaised with [International Conferences, Workshops and Exhibitions](#) (ICWE GmbH, Berlin) at the international level to organize a one-day seminar entitled [Technology-Supported Learning for Environmental Education](#) in Dakar, Senegal on Wednesday 27th May, 2009. The seminar was a pre-conference event affiliated with the [4<sup>th</sup> International Conference on ICT for Development, Education and Training](#) (eLearning Africa).

[eLearning Africa](#)'s mission is to bring together people who are actively engaged in education and in the implementation of learning technologies in schools, universities, corporate training as well as in education in the public sector. Participants are high-level decision-makers such as Ministers of Education, representatives from government agencies, non-governmental organizations (NGOs), development agencies and international organizations, senior executives from businesses, as well as practitioners from all fields of education.

The one-day seminar was attended by participants from 16 African countries and the agenda addressed the implementation of decision 6, particularly the establishment of the Africa Environmental eLearning Network. A working paper entitled [Implementation of Decision 6 of AMCEN-12 – current progress and proposed actions](#) was presented to the meeting along with a set of proposed actions for endorsement. The [Chair's summary](#) describes the main outcomes of the meeting which included the identification of sub-regional hubs and national centres of the Africa Environmental eLearning Network and a list of volunteer countries that will develop eLearning strategies and action plans

For the first time ever, eLearning Africa included a special environmental track on [Mainstreaming eLearning for Environment and Sustainable Development](#) in eLA-4 on Friday 29th May, 2009. Representatives of UNEP, [Common Sense](#), [Centre de Suivi Ecologique](#) (CSE-Senegal), [Center for Environment and Development for the Arab Region and Europe](#) (CEDARE) and [NEMA-Kenya](#) made presentations on the application of eLearning to support environmental programmes

## Press Releases / Articles

UNEP issued a press release to inform all potential stakeholders of the outcome of the seminar held before the [4<sup>th</sup> International Conference on ICT for Development, Education and Training](#) (eLearning Africa). The press release can be found at the following URL: <http://www.unep.org/mentor/Africa/PR-eLearning-Africa-seminar.doc>

An article on the implementation of Decision 6 will appear in ICWE's e-zine on eLearning Africa 5 in Lusaka (26-28 May 2010)

## **Section 5: Conclusion**

### **5.1 Reflections on 2008-2010**

Although a good deal of progress was made since AMCEN-12 in implementing Decision 6, the main challenge faced with the implementation process was that it was not factored into UNEP's programme of work for 2008-9 and therefore no budget was earmarked to support its implementation. A project proposal on Decision 6 was written and presented to UNEP's Project Review Committee but was not approved. As a result, the decision had to be implemented through an exercise of partial diversion of funds allocated to other areas of UNEP's 2008-9 POW, otherwise very little would have been accomplished and the AMCEN constituency would not have been well served. A total of 18 countries are participating in the network so there is obviously scope for further coverage of the network.

Also, there is need for strategic focus in implementing environmental education and training programmes in primary and secondary sectors in Africa. Collaboration with partners in this regard is important to mobilize their networks to implement such programmes. In this biennium, the focus of Environmental Education and Training in UNEP is through working with universities. Strategies will need to be developed to target primary and secondary education sectors using universities as the springboard.

### **5.2 Next steps for 2010-2012**

The effectiveness of a network is largely dependent on the number of active members participating in the network. Over the next two years a concerted effort will be made in the area of network building to:

- a) Consolidate the existing backbone of the network and by building the capacities of the sub-regional hubs, and
- b) Encourage all AMCEN member countries to participate in the Pan-Africa eLearning for Environment Network.

Within countries the multi-stakeholder networking model (see Kenya example in Annex III) will be encouraged so as to link the environment sector with the education sector and other relevant sectors in the spirit of mainstreaming environmental considerations across all government sectors. Linkages with the non-governmental sector will also be strengthened within the context of the UN Decade of Education for Sustainable Development (UNDESD). Exchange and joint development of programmes will be promoted amongst African universities. Stronger links between these universities and teacher colleges and secondary schools will be established.

Environmental authorities will be encouraged to implement eLearning strategies and develop action plans to mainstream eLearning into their operational programmes and to use bilateral donor funding to support the implementation of those action plans. Sub-regional hubs of the network will be encouraged to develop sub-regional projects for consideration by multilateral donors.

Special emphasis will be placed on the Arabic, French and Portuguese speaking African countries in order to invite their participation in the network, provide training in these three languages, and strengthen the capacities of national environmental authorities in the countries where these languages are the official national language. InWEnt is in the process of finalizing the eLiP training course and supporting materials in French. Capacity development will be intensified with an initial focus on the sub-regional hubs using a train-the-trainer approach which will subsequently strengthen the national centres that are satellites around the respective hubs. Additional focus will be placed on South-South cooperation across the operational activities of the network.

Awareness-raising activities will also be intensified in order to support the network building initiatives and draw greater prominence to the role of technology-supported learning in strengthening the roles of institutions and individuals in solving environmental problems and achieving sustainable development.

## **Annex I: Decision 6: Environmental education and technology-supported learning**

We, African Ministers of Environment,

Having met in Johannesburg from 10 to 12 June 2008, at the twelfth session of the African Ministerial Conference on the Environment,

Welcoming the working paper submitted by the secretariat on opportunities and challenges for environmental institutions and universities in Africa in adopting technology-supported learning,

Welcoming also the commitment by the New Partnership for Africa's Development, towards the enhancement of Africa's human resources through the provision of more and better education and training, especially in information and communications technology and other skills central to a globalizing world,

Noting the commitment made by the African Ministers of Education in 2006 to implement the United Nations Decade of Education for Sustainable Development in the context of the Second Decade of Education in Africa and, in particular, to support the development of strategies for implementing the United Nations Decade of Education for Sustainable Development in their respective countries within the framework of the African Union's Second Decade on Education, and to ensure that principles of sustainable development are included in educational development frameworks, programmes and activities at all levels,

Noting also the Geneva Plan of Action and the Tunis Agenda for the Information Society adopted at the World Summit on the Information Society, in particular the action line addressing e-learning and e-environment,

Recalling the decision of the Governing Council of the United Nations Environment Programme at its twenty-fourth session in February 2007 to promote and support environmental education programmes as a highly effective tool for building an environmentally sensitive and responsive populace capable of partnering with Governments in achieving established policy goals and targets,

Recalling further the adoption of the Bali Strategic Plan for Technology Support and Capacity-building by the Governing Council of the United Nations Environment Programme at its twenty-third session, in February 2005, as an inter-governmentally agreed approach to enhancing the capacities of developing countries and countries with economies in transition and the implementation plan of the United Nations Environment Programme for the Bali Strategic Plan, presented at the ninth special session of the Governing Council/Global Ministerial Environment Forum, held in Dubai in February 2006,

Decide:

(a) To encourage Governments, through their principal environmental authority, to facilitate interministerial cooperation to undertake, among other things, the following key actions in the area of environmental education and technology-supported learning:

(i) An assessment of existing environmental education strategies, needs and challenges facing Governments in the area of technology-supported learning;

(ii) The development of a strategic approach to mainstreaming environmental education across all relevant governmental institutions, including the design of programmes suitable for the primary, secondary and tertiary education sectors; and fostering cooperation with the non-formal environmental education sector

(iii) The development of an action plan for technology-supported learning in conjunction with the Human Resources, Science and Technology Department of the African Union (including e-learning) in follow-up to the strategic approach;

(b) To request the Executive Director of the United Nations Environment Programme to provide strategic guidance and technical advisory services on the implementation of the above-mentioned activities

and multilateral development partners to provide financial and technical assistance to build the capacities of African countries in this respect;

(c) To request the United Nations Environment Programme and the United Nations Educational, Scientific and Cultural Organization and other partners concerned to strengthen their cooperation within the framework of the United Nations Decade of Education for Sustainable Development in order to provide their technical support and expertise to African countries to implement effectively and develop e-learning on environmental education for sustainable development;

(d) To constitute a small group of members of the African Ministerial Conference on the Environment to undertake, on a trial basis, the development of 1–2 year pilot action plans for technology-supported learning;

(e) To request the United Nations Environment Programme to identify partnerships involving international organizations, the donor community, the private sector and centres of excellence that will support the implementation of the pilot set of action plans;

(f) To request Governments undertaking the pilot action plans to provide an interim report to the African Ministerial Conference on the Environment at its thirteenth session and a final report to the African Ministerial Conference on the Environment at its fourteenth session on the status of their implementation;

(g) To request the United Nations Environment Programme and the United Nations Educational, Scientific and Cultural Organization to enhance greater stakeholder involvement including non-governmental organizations, scientific organizations, nature clubs and local communities in the e-learning programme and in dissemination and exchange of information;

(h) To invite countries to establish an African environmental e-learning network to share expertise, best practices and content and to identify a coordinating hub.

## **Annex II: Terms of Reference for Sub-Regional Hubs and National Centres**

### **Terms of reference for the Sub-Regional Hubs**

- a. Build synergies among stakeholders to promote consensus and collaboration on issues of concern in eLearning
- b. Provide a suite of e-services and facilities to stakeholders
- c. Respond to Technical and other specific needs of stakeholders in the area of eLearning
- d. Build a sub-regional eLearning network with appropriate governance structure
- e. Promote a culture of eLearning in the sub-region
- f. Build capacities of countries in the region in the area of content development, instructional design and systems administration for eLearning programmes
- g. Promote South-South cooperation on eLearning through partnership building
- h. Act as a sub-regional training facility offering basic and advanced eLearning courses
- i. Oversee the development of a suite of eLearning courses on environmental matters
- j. Establish expert working groups to address relevant eLearning issues such as content development, quality assurance, monitoring & evaluation, capacity development, ICT infrastructure, etc. coordinate the activities of stakeholders and provide technical and professional guidance to the stakeholders involved in eLearning activities.

### **Terms of reference for the national eLearning centres**

- a. Facilitate establishment of multi-stakeholder partnerships to develop a strategy to mainstream environmental education across formal and non formal education sectors in the country.
- b. Develop courses on thematic areas targeting the universities and teacher training colleges to ensure emerging environmental issues and taken up in higher education institutions.
- c. Ensure inter-ministerial collaboration to ensure the achievement of Education for Sustainable Development
- d. Engage in the collection of case studies / best practices of eLearning / TSL strategies in the environmental sector and ensure stakeholder participation in the development and implementation of TSL strategy

- e.** Promote national multi-stakeholder partnerships for eLearning (including private sector, NGO, community-based organizations).
  
- f.** Conduct e-readiness surveys to establish the status of TSL among stakeholder institutions.
  
- g.** Provide a suite of e-services and facilities to stakeholders.

## **Annex III: Status of Implementation of Decision 6 in Kenya – A country case study**

### **Introduction**

Ever since the 1972 Stockholm conference the consensus has been that education is crucial to the achievement of sustainable environmental management and overall sustainable national development. Governments were encouraged to make sure that more and more resources are devoted towards education and creation of public awareness through appropriate information sharing and dissemination.

The World Summit on Sustainable Development (WSSD) in Johannesburg in 2002 broadened the scope of sustainable development to encompass the human, social, economic and environmental aspects of sustainable development.

The summit spelt out the need for peace, justice and the fight against poverty as key in sustainable development. The international community therefore declared 2005 -2014 as a decade of Education for Sustainable Development (UNDESD 2005-2014).

The Government of Kenya (GoK) recognizes the central role of Information and Communication Technology (ICT) in human development for the attainment of a knowledge-based economy. In this regard the Government has embarked on a number of initiatives through the Directorate of e-Government under the Office of the President (DeG/OP), to establish a conducive environment for the use and application of ICTs to enhance learning, increase efficiency and improve service delivery.

One of the early initiatives launched by the Directorate of e-Government (DeG) in partnership with the Global e-Schools and Community Initiative (GeSCI) was the establishment of Kenya e-Learning Centre as a coordinating mechanism for e-Learning development in the public sector. KeLC recognizes the skills already existing among stakeholders and endeavours to optimize them to drive the common e-Learning agenda.

### **The Kenya eLearning Centre**

After the Second e-Learning Africa Conference (eLA-2) held in Nairobi in May 2007, the Department of e-Government (DeG) in the office of the President (OP) organized an e-Learning roundtable meeting. The public, private and civil society sectors were represented. The DeG then partnered with Global e-schools and Communities Initiative (GeSCI) to undertake a Rapid Initiative Analysis (RIA) with the aim of achieving a snapshot of the e-Learning activities in key institutions and provide a way forward. The process was carried out between September and November 2007.

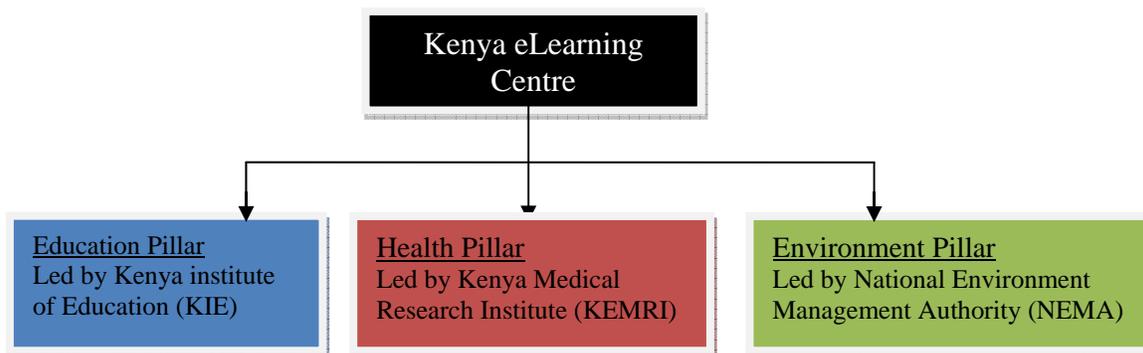
The objectives of the RIA were:

- To determine the status of e-learning readiness and the level of implementation in key institutions.
- Identify opportunities, gaps, overlaps and challenges.
- Identify possible mechanisms and the preferred structure for such a mechanism.

The results of RIA called for a coordinating mechanism for e-Learning development in the public sector which led to the creation of the Kenya e-Learning Centre (KeLC) to coordinate the e-Learning initiative in the country.

As a coordinating mechanism, KeLC is building synergies between stakeholders to promote consensus and collaboration on issues of concern in e-Learning. It has developed partnerships with national, regional, and international organisations involved in e-Learning. This aims at boosting the drive towards improved service delivery in the Kenyan public sector.

KeLC's structure borrowed heavily from the Namibian multi-sectoral approach the establishment of Namibian Open Learning Network Trust (NOLNet). KeLC initiative therefore adopted a multi-sectoral approach initially starting with two main pillars namely health and education. Later in 2008, the environment pillar was spearheaded by the National Environment Management Authority (NEMA). UNEP played a vital role in the strengthening of the environment pillar of KeLC through capacity building, technical and financial support.



**Fig. Multi-stakeholder network model of Kenya eLearning Centre (KeLC)**

KeLC has also established four cross cutting working groups spanning the three pillars. These are:

- Content Working Group
- Capacity Building Working Group
- Infrastructure and Connectivity Working Group
- Quality Assurance Working Group.

### **The Environment Sector led by the National Environment Management Authority (NEMA)**

The National Environment Management Authority (NEMA) is the convenor of the environment sector. The environment sector is comprised of institutions that handle environmental data and information and those whose mandate deals directly with natural resources.

In April 2008, the National Environment Council (NEC) adopted Education for Sustainable Development (ESD) implementation Strategy as a guideline to improve quality of education, orientate education towards sustainable development, and increase public understanding and awareness of sustainability and to build capacity of all the stakeholders. The implementation strategy laid down eight action points. These include; advocacy and vision building, consultation and ownership, partnership and networks, capacity building and training, research and innovation, use of information communication technologies (ICT) and monitoring and evaluation and Regional Centers of Expertise (RCEs).

The National Environment Management Authority (NEMA) in collaboration with the stakeholders has integrated ICT in Environmental Education through use of e-Learning. This has been further strengthened by the adoption of Decision 6 of the 12th session of the African Ministerial Conference on Environment (AMCEN) held in Johannesburg, South Africa in June 2008.

In October 2009, NEMA (as the lead for the environment sector) signed a Small Scale Funding Agreement (SSFA) with UNEP to help in the implementation of the Decision 6. Under this SSFA, several activities were implemented:

- a. **Awareness Creation:** A high level round table discussion was held for the Chief Executive Officers (CEO) in the environment sector in July 2009 in UNEP to discuss the mainstreaming of technology supported learning in the environment sector in Kenya. Subsequently ten (10) sensitization meetings were held in various environment sector institutions by NEMA/MeLDC and UNEP to create awareness on e- Learning. (see attached table for list of institutions visited)
- b. **E-Readiness assessment in the environment sector:** An e-readiness survey was conducted between October and December 2009 in some selected institutions in the environment sector through use of a questionnaire. Not all institutions in the sector could be visited due to financial constraints. The report revealed that there is low level of awareness of e-Learning and inadequate human resource in the institutions. Most institutions pointed out the need for capacity building for staff especially in the area of skills development and technology transfer. There is also need for infrastructural support and e-Learning policy formulation in the environment sector. It was clear that there was need for standards to be adopted in the process of establishing e-Learning programmes.
- c. **Capacity building and Training for the environment sector:** Several people have attended an e-Learning in Practice (eLiP) training course. UNEP supported the environment sector institutions by training three (3) NEMA staffs on e-Learning in Practice (eLiP). Representatives from Ministry of Youth and Sports, Kenya Wildlife Service and Ministry of Agriculture have also been trained. Other members have also been trained on the installation and administration of a Learning Management System (LMS) called chisimba. NEMA needs support to install a server to run the LMS.
- d. **Establishment of working groups: NEMA together with other stakeholder institutions** in the environment sector developed four (4) working groups to assist in e-Learning in areas related to content Development, Capacity Building, Infrastructure & Connectivity, Quality Assurance (Monitoring and Evaluation).
- e. **Development of an e-Learning strategy for the Environment Sector:** The environment sector developed a draft e-learning strategy through a stakeholder consultative process. The strategy formulated a vision, mission, objectives, expected outputs, target groups, and an implementation framework and matrix for 2010-2015. This strategy is expected to feed into the national e-learning strategy which will be developed by the lead ministry in the government.
- f. **National e-Learning Task Force:** Plans are underway to form a national eLearning task force to guide the development of a national e-Learning Strategy and policy for the country.

## **Ministry of Environment and the establishment of the Ministerial eLearning Development Committee (MeLDC)**

To guide and provide policy incentives to e-Learning in all institutions in the environment sector in the government, the Permanent Secretary (PS) Ministry of Environment and Mineral Resources (ME&MR) in consultation with the Minister, Ministry of Environment and Mineral Resources appointed a Ministerial e-Learning Development Committee (MeLDC) in March 2008. The committee brings together the representatives from all the institutions in the environment sector and provides a mechanism for exchanging ideas, challenges and forging common ground on issues pertaining to e-Learning in the sector. Since each institution has its own internal e-Learning committee, the MeLDC representatives from these institutions are expected to bring their concerns, needs and challenges to the main committee. The committee is currently chaired by the Permanent Secretary, Ministry of Environment and Mineral resources.

As a first step the MeLDC plans to carry out an e-readiness assessment in all the institutions in the environment sector to establish the status for e-Learning in the Ministry of Environment and Mineral Resources, its departments and all other institutions in the environment sector in general. The e-readiness index list will be based on human resource capacity, system administrators, ICT infrastructure (computers, servers etc).

The following are the broad objectives of the MeLDC:

1. Promotion of Environmental Awareness through e-learning within the Ministry of Environment and Mineral Resources.
2. Establishment of status and gaps for e-learning within the Ministry of Environment and Mineral Resources in terms of the four components-content development, capacity building, quality assurance (M&E) and infrastructure and connectivity
3. To harmonize e-learning interventions by various stakeholders in the environmental sector.
4. Taskforce to coordinate, harmonize and synergize e-learning intervention by various stakeholder within the Environmental Sector.
5. Develop resource mobilization plan to spearhead and assist in implementation of e-learning.
6. Make recommendations on appropriate policy guidelines to mainstream e-learning in the environmental sector.
7. To leverage e-learning for training and capacity building among environmental stakeholders
8. Carry out any other task that may be assigned by the PS from time to time.

## **Challenges for Technology Supported Learning in the Environment Sector.**

The following are some of the challenges facing the sector in terms of implementation of technology supported learning:

1. Low levels of awareness on technology supported learning. Where some e-Learning activity is on-going it is not mainstreamed fully into the organizational budget and performance targets of individual staff members making their sustainability a big challenge.
2. Inadequate infrastructure such as computers, networks and accessories is also a major challenge.
3. There is inadequate human resource in terms of skills and number of personnel to implement e-Learning activities.
4. Lack of sufficient financial resources to implement e-Learning programmes.
5. Lack of electricity in most parts of the country. **Way Forward and Recommendation**

The following are **some of the recommendations and** way forward for e-Learning in the environment sector:

- (i) There is need for establishment and/or strengthening institutional e-learning committees.
- (ii) Capacity building on e-Learning at all levels.
- (iii) Strengthen MeLDC to include membership from key institutions that are outside the ministry of environment such as Kenya Wildlife Service (KWS) and Kenya Forest Service (KFS).
- (iv) Undertake resource mobilization for e-Learning activities and programmes
- (v) There is need to train e-Learning institutional committee members in environmental institutions in basics of e-Learning.
- (vi) Establish a web portal to enhance networking amongst implementing institutions.
- (vii) Develop a monitoring and evaluation tool to be used in evaluation of activities that have already been implemented.
- (viii) Develop awareness materials to enhance awareness creation.

**TABLE 1: E-LEARNING AWARENESS MEETINGS FOR INSTITUTIONS IN THE ENVIRONMENT SECTOR**

	<b>Name of institution</b>	<b>Date of meeting</b>	<b>No. of participants</b>
1.	High level round table discussion for Chief Executive Officers of Kenya Environmental Institutions.	16 <sup>th</sup> July 2009	65
2.	Ministry of Environment and Mineral Resources	4 <sup>th</sup> September 2009	15
3.	Kenya Meteorological Department	6 <sup>th</sup> October 2009	11
4.	Department of Resource Surveys and Remote Sensing (DRSRS)	9 <sup>th</sup> October 2009	37
5.	Department of Mines & Geology	22 <sup>nd</sup> October 2009	30
6.	Kenya Forests Service	26 <sup>th</sup> October 2009	22
7.	National Museums of Kenya	2 <sup>nd</sup> November 2009	22
8.	University of Nairobi	10 <sup>th</sup> November 2009	27
9.	Jomo Kenyatta University of Agriculture and Technology (JKUAT)	11 <sup>th</sup> November 2009	20
10.	Kenya Industrial Research & Development Institute (KIRDI)	16 <sup>th</sup> November 2009	12
11.	Kenya Bureau of Standards	17 <sup>th</sup> November 2009	32
12.	National Environment Management Authority	18 <sup>th</sup> November 2009	18