

Sustainability Education Meets Development in West Africa



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Abstract

According to UNESCO, key indicators of the right to education are weakest in Sub-Saharan Africa compared to other regions in the world. Teacher to pupil ratios are poor in most countries and drop out rates before completing the primary cycle averaged 36% in 2011. Education starts at home, yet the school in Sub Saharan Africa is the basic center of attention for pupils and their families and often the (only) visible sign that there are some services provided by the State. For generations, especially in West Africa, the expression “TEACHER SAID” was the ultima ratio. It still is a guide for different messages discussed at home and raising the curiosity of local communities, thus creating bottom up development. Strengthening sustainability education under these circumstances poses particular challenges. Sustainability education is here understood to encompass notions usually associated with global education, but further enriched by attention to greater awareness and protection of the environment, nurturing solidarity within a setting and internationally, and to local culture. From our experience in development projects the involvement of teachers as multipliers and change agents was most effective on sanitation issues and on gender. The environmental aspects focus on sustainable use of renewable resources and trans-generational, lifelong learning. Both induced or aim at inducing behavioural changes.

Here, we report on work with local partners towards greater awareness about sustainability and the linkage of institutionalised curriculum development in West Africa with applied, local accompanied learning/education in pilot schools. The paper does away with conventional understanding of development as a 'North-South' issue and is informed by understanding that especially sustainable development applies to all countries and focuses on greater distributional justice supported, among others, by the right to education. We point to the similarity of the principles underlying educational and development activities for different age groups, but also the need for nuanced and site-specific adaptation to achieve critical engagement. The paper concludes with proposals for action research to take the field practice to the next level in the light of new educational priorities adopted at the recent Regional Coastal and Marine Forum in West Africa. Enter abstract here (maximum 500 words)

Keywords

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Introduction

According to UNESCO, key indicators of the universal right to education are weakest in Sub-Saharan Africa compared to other regions in the world. Teacher to pupil ratios are poor in most countries and drop out rates averaged 36% in primary education in 2011 (compared to 34% in 1999) according to the latest aggregate assessment. Moreover, an estimated 22 % of the region's primary school age population is still out of school. Globally, denial of primary schooling affects girls disproportionately at 56% (UNESCO, 2014). Completion of lower secondary education is considered crucial to acquire foundation skills. In the period from 1999 to 2011, the “fastest growth was in sub-Saharan Africa, where enrolment more than doubled, albeit from a low base, reaching 49% in 2011.” (UNESCO, 2014).

Our article is a contribution towards going beyond aggregate numbers of national accounting systems compiled by UNESCO and others to explore some of the ground realities, particularly as they relate to how sustainable education is linked to community development, changes and transformation and ownership of structures in development and the different forms of knowledge management.

The non-profit association, Mundus maris, is trying to make scientific research palatable and accessible for ordinary citizens. It outlines multiple and serious threats to marine life ranging from overfishing, habitat destruction, pollution to climate change. It also works towards instilling interest and love for the sea that stabilises our climate, provides every second breath we take, is a source of valuable food and unrivalled recreation, to mention but the most obvious. The central occupation of Mundus maris is to help protect the oceans and the people of the sea.

Since the late 1980s global marine fisheries landings are shrinking by approximately 700,000 tons per year as a result of world-wide overfishing. This affects the health and resilience of marine ecosystems and has serious consequences to local fishing communities, but also to consumers world-wide. According the DG MARE of the European Commission, the EU is the biggest market for fisheries products in the world (European Commission, DG MARE, 2014) and imports 70% of its demand after reducing the resources in its own waters to a shadow of their former selves.

Marine fisheries already use about 1/3 of global primary production, almost as much as our exploitation of terrestrial ecosystems (Pauly and Christensen, 1995) . Less and less is left for regenerative functioning of marine ecosystems across the oceans and there is no chance to expand use according to current fishing practices, many of which use unselective and destructive gear, such as trawling. We are eating the capital, instead of leaving more fish in the sea to harvest the once rich surplus of healthy ecosystems. Restoring marine (and terrestrial) ecosystems is thus of great

urgency. Only a bit more than 2% of the global oceans are no-take zones, less are effectively protected. This is still a long way off the target to protect at least 10% of the oceans as agreed by the parties to the Convention on Biological Diversity.

The context

We start out with a few definitions and contextualising annotations in order to explain our vantage point and reduce the risk of misunderstandings across different professional and cultural starting points of readers.

1. Sustainability: We use the definition from the English Wikipedia site: “Achieving sustainability will enable the Earth to continue supporting human life.” We would add that the reverse could also be the case. Indeed, more recent approaches have broadened the idea of sustainability to include social wellbeing, resilience and adaptation across four domains: ecology, economics, politics and culture.

In ecology, sustainability is understood as the ability of biological systems to endure and remain diverse and productive despite evolving circumstances and conditions.

We welcome the evolving nature of the concept as the surrounding ambiguities make it ideally suited to fit changing circumstances and continue to have great power to engage people across professions, cultures, genders and other distinctive characteristics.

In this regard Mundus maris' (MM) mission is to provide scientific and relevant indigenous knowledge and encourage artistic expression about the sea in order to promote its restoration, conservation and sustainable use, to further the study, understanding and respect of aquatic ecosystems and associated biological and cultural diversity.

We advocate a focus on oceans and seas as they cover about 70% of our planet's surface, sustain our climate and are providing every second breath we take. Learning about them and their role in enabling the diversity of life and cultures, protecting them better, encourage sustainable ways of living on earth, is intimately connected to the needs of global education and development efforts. This is particularly true as our oceans are increasingly plundered and depleted of life (Lövin, 2012; IPSO, 2013). So cooperation with academic institutions, schools and development organisations in studying, engaged learning and practising locally adapted forms of sustainable living within the renewal possibilities of our planet together with promoting solidarity is a core concern for MM.

We work towards combining concepts and theory with practice on the ground in collaboration and support of local schools in different countries in West Africa, Europe and elsewhere promoting partnerships with and between schools to harness e.g. peer learning for essential capacity strengthening. This reflects the understanding that fundamental shifts in resource allocation to

educational establishments, particularly in lower and middle-income countries is unlikely to happen fast. At the same time, all opportunities to support teachers and mobilising resources both within and outside educational systems, including through unconventional means, are worthwhile using to strengthen the morale and capacity of often overstretched teachers.

Worldwide cooperation on research and use of research about the oceans is reflected on our website and presence in the social media. These platforms are intended to document the collaborative activities and provide access to updated info on our seas and other resources in the public domain.

2. Education: As mentioned in the introduction, according to UNESCO (2014), key indicators of the right to education are weakest in Sub-Saharan Africa compared to other regions in the world.

Education starts at home, yet the school in Sub Saharan Africa is the basic center of attention for pupils and their families and often the (only) visible sign that there are some services provided by the State. For generations, especially in West Africa, the expression “TEACHER SAID” was the ultima ratio. It still is a guide for different messages discussed at home and raising the curiosity of local communities, thus creating bottom-up development. Teachers are uniquely placed multipliers and amplifiers.

Strengthening sustainability education under these circumstances poses particular challenges. Sustainability education is here understood to encompass notions usually associated with global education, but further enriched by attention to greater awareness and protection of the environment, nurturing solidarity within a setting and internationally, and to local culture. In some coastal communities in West Africa the umbilical cord is buried in the ground and a coconut tree planted on top of it. This creates a feeling of being in partnership with the tree, in line with ancestral belief, and of being part of that community and its environment. Wherever possible, it is wise to build bridges between cultural and other traditions and 'modern' approaches to education.

From our experience in development projects the involvement of teachers as multipliers and change agents was most effective on sanitation issues, environmental education and on gender. Many schools in Africa have established sustainable school gardening and the education on environment with the active involvement of the students since more than 30 years. They often link those activities with local or international Civil Society Organisations working in that area. The environmental aspects focus on sustainable use of renewable resources and trans-generational, lifelong learning and produce fresh food! Both induced or aim at inducing behavioural changes.

Making good use of reusable materials and learn how to do composting is part of that scenario. In turn, those groups then asked and encouraged their municipalities to start introducing waste

collection and separation of organic materials and others (e.g. in Freetown, Sierra Leone). One may well argue that these groups adopt a system thinking approach.

Environmental cafés planned in Sierra Leone are another example intended to demonstrate directly to the youthful target group a holistic approach of sustainable development by connecting the concept to daily experiences, which include many processes and activities. Among the examples of integrated activities with a high degree of sustainability are treating waste water with plants, compost production and sale of flowers and a nursery in cities or peri-urban spaces. In several cases, this was supposed to be combined with sensitisation with audio-visual material and free publications by UNEP. Unfortunately the civil war stopped this local project.

Below, we report on work with local partners e.g. in Senegal and Gambia towards greater awareness about the need to change unsustainable practices. This creates a linkage to institutionalised curriculum development in West Africa through accompanying applied, local learning/education in pilot schools. The paper does away with conventional understanding of development as a 'North-South' issue and is informed by understanding that especially sustainable development applies to all countries and focuses on greater distributional justice supported, among others, by the universal right to education.

We point to the similarity of the principles underlying educational and development activities for different age groups, but also the need for nuanced and site-specific adaptation to achieve critical engagement.

3. Community Development: Wikipedia proposes community development as „a broad term given to the practices of civic activists, involved citizens and professionals to build stronger and more resilient local communities. Community development seeks to empower individuals and groups of people by providing them with the skills they need to affect change in their own communities. These skills are often created through the formation of large social groups“.

By aligning their diverse perspectives and efforts in support of a common agenda, this bottom-up approach may be complementary to or in replacement of formerly practised top-down approaches. The ambition of community development is to take all stakeholders along in the understanding that they or their common interest groups have more in common than what divides them.

Often those groups work with civil society organisations. They typically invest in the public good and help people to recognise and develop their ability and potential and organise themselves to respond to problems and needs which they share. Functioning community development promotes social justice and helps improve the quality of community life. It has potential to improve governance

through broader, more robust relationships between public agencies and local communities concerned.

4. Education for Sustainable Development (ESD): Any development activity and development projects are process-oriented, despite the fact that planning for development is based more or less on measurable indicators. In such a setting process indicators are difficult to define and pursue. Sustainable development was described as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs by the Brundtland Commission (World Commission on Environment and Development, 1987).

ESD has many facets in education systems, in teacher education, policy, public awareness, cooperation, communication, but reorienting teacher education towards sustainable development plays a particularly influential role in providing advice to principals, informing new generations of teachers and providing inputs to educational policy (UNESCO Education Sector, 2005).

There is no shortage of recent declarations in favour of sustainability in general, starting with the Brundtland report (World Commission on Environment and Development, 1987), and sustainability education in particular, e.g. the Bonn Declaration (UNESCO, 2009). However, the promises of the UN Decade on ESD went largely unmet and the recent assessment of advances in access to education in general and more specifically to the quality of teaching and learning shows that progress has been too slow to meet the Millennium Development Goal No 2 of achieving universal primary education within the deadline (2015).

Despite advances in access to education from primary to tertiary in many industrialised countries, ESD is not yet a generalised feature. The societal role models underlying teaching of teachers and teaching of youngsters are not imbued by sustainable living and being. Indeed, the ecological overshoot of global human populations is very largely due to production and consumption patterns in industrialised high income countries, especially, when analysed on a per-capita basis. These consumption expectations are propagated through advertising and also directly or indirectly underlying content and role models in the curricula in industrialised countries. For a variety of reasons, resource consumption in low and middle-income countries is much closer to what could be globally sustainable, though skewed wealth and opportunity distributions are often an obstacle to sustainability (Ecological Footprint Network, 2012). That also casts a different perspective on notions of overpopulation.

Societal values and consumption patterns in many societies drawing on traditional belief systems and practices appear to be closer to balancing individual and group consumption with the regenerative capacity of the planet, but they are rarely recognised and rather marginalised in the

dominant discourse and practice. That translates into the immense task of changing the current focus on self-orientation of education, aiming at employability and individual careers, towards learning about what it means to live in sustainable manners – an approach which can still be observed in many indigenous cultures (Hopkins, 2011).

Urbanisation processes have affected Africa at a slower pace than other regions of the world. The percentage of rural populations shrank from about 86% in 1950 to just over 60% in 2011, when most other regions registered more urban than rural people (UN, Department of Economic and Social Affairs, 2011). Urbanisation processes do not only create new markets in primarily in coastal cities in West Africa - and elsewhere in the world -, but are also disruptive to traditional forms of education within the family and the community and the transmission of knowledge between generations. To stay with the analysis of Hopkins (2011), this weakens the role of self-restraint exercised in more indigenous and/or traditional social organisation forms.

On the other hand, these processes mean new transmission routes of knowledge to the country side, even to remote places, as the extended family structure becomes geographically distributed over wider areas, including the diaspora abroad. Urbanisation certainly creates new challenges to balancing resource use on the planet (Brown and Jacobson, 1987), however, it has also been argued that greater efficiencies in social services, transport and energy use can play a positive role (Pearce, 2006). Here is not the place to document and discuss these macro-trends. For the purpose of this article we just flag the social transformation trends implied in the urbanisation processes in combination with growth of the global human population and technological developments in computer science, social media and the way communication takes place. Together with engrained ways of upbringing that differ across cultures (Nisbett, 2004) these all affect various education systems and learning inside and outside of schools and in peer groups.

In Water Supply Sanitation and Hygiene Projects (WASH) the driving force for people is to reduce health risks with proper water supply and proper hygiene education. Here is an example of how proper drinking water supply and sanitation demand in fishing communities in Sierra Leone was fuelled by a cholera outbreak in fishing villages in Sierra Leone in Shenge and surrounding fishing villages at the end of the eighties which generated an interesting mix of self-help in intelligent combination with external support for the type of knowledge and competences not available in the village.

The hygiene conditions were appalling and no clean drinking water was available. Then oral rehydration salts were distributed. To overcome shortages, even use of self-help water sugar

solution to face dehydration was taught. In that scenario a crash well-construction was started in several fishing villages.

Communities reinforced their self help potential and assisted the water technicians bringing in the technical knowledge unavailable locally at the time. The children had to carry sand and women were doing the cooking for all those working on the wells. The first author was in an FAO fisheries project in those villages then working for community development.

Until well completion the people tried to get something for free from the FAO project for their wells, even minor items. All they got was some assistance for entertainment and drinks at the opening ceremony. Contrary to expectations of well-meaning development agents the need to rely very largely on their own resources, though obtaining technical help from the water technicians, increased their sense of ownership, which was cemented through this approach. This resonates with a Grebo proverb from Liberia, which says: "Given leaves don't fill the stomach". The example also illustrates a more general finding by Sebastiao Mendonça Ferreira (2011), who emphasises the crucial role of grounding in local knowledge enhanced by external inputs upon demand for any lasting development efforts.

Fifteen years later the first author visited the region again to discover that the wells were still operational and maintained. The people were proud about that and their region. During the civil war in Sierra Leone, they even managed to keep the rebels away from their villages by supplying them with smoked fish.

The history of well construction in Africa often tells a different story. Wells dug by projects with little or no involvement of the local population are often abandoned and not used properly. Built by government or external donors they are often not well-kept unless the community has gotten engaged in the pre-planning process and is at least partially responsible for financial support and maintenance.

This is called a demand-driven approach and according to Ferreira (2011) the most promising way generating lasting development. The approach was used as well in three States in Southern Nigeria, where the EU-funded project "Small Towns Water Supply and Sanitation Project (STWSSP)" even set up escrow accounts for future maintenance. In the phase of exploring the appropriate places to drill for water the knowledge of the environment and climate change of the elders in communities was a precious base for assessment. All the same, not all expected results accrued, mainly due to administrative obstacles from government agencies, which slowed the execution of well-construction. But in the end the small towns got their functional water supply system.

Self help in Africa is wide-spread and much practised out of necessity, especially in West Africa. Some richer countries or States seem to have lost some of this momentum of mobilising the internal energies for the well-being of communities. But the step-by-step build-up of the self-esteem of the population in neglected areas has proven more than once its worth. Ideally, it is coupled with efforts of a well-contextualised development project, which uses participatory rural appraisals (PRAs) as the entry point for targeting its support actions to what the local stakeholders plan to do as a priority for themselves.

Successful community self-help schemes and common interest groups often collaborate with civil society organisations, thus furthering the leverage of their social capital. Awareness of traditional gender roles is important to work with the ground reality that the voluntary work in projects concerning health and hygiene or waste disposal etc. is usually carried out by women or youth. This can then become the starting point for critical reflection about gender roles that can be supported by education, context-specific art forms (e.g. theatre, dance) and open up new opportunities for community service also for men.

6. Leadership in transformational change: As extensively discussed and illustrated by Fullan (2001, 2002), leadership involving capacity building and shared responsibilities is among the important principles for managing change successfully in education systems. Leadership here is not understood in the conventional mode of business schools, but rather as a system of honing leadership qualities in every part and level of the education system as a precondition to internalise change management and make implementation of commonly agreed objectives robust. We have observed the same principle adapted in the previously mentioned health crisis in the Sierra Leonean fishing village of Shenge. It was not one charismatic leader who could have gotten in wrong, but collective leadership at all levels that helped to overcome the crisis.

Methods of developing such leadership can differ. But some of the basics can guide each context-specific effort: Recognition of and support for principals, teachers and other responsible persons in the education system and collective learning processes in real-life teaching and managerial situations are key to the development of collegial and collective leadership. Incidentally, it is also an effective way to address generational change or teacher mobility in general by balancing continuity of service with ability to lead change.

Learning by doing – an example from Senegal and Gambia

In early 2011 the FAO – EAF Nansen Project approached Mundus maris to carry out a needs assessment and implement pilot activities based on this needs assessment, which would serve as a stepping stone to produce culture-adapted teaching tools for introducing the ecosystem approach to

fisheries into school curricula of primary and secondary schools. The concept and implementation mode for the initial needs assessment was developed in interaction between MM headquarters in Europe and the local MM leader in Senegal, Dr. Aliou Sall, an experienced socio-anthropologist with specialisation in artisanal fisheries in the region, and FAO.

The needs assessment was carried out under local leadership of Dr Sall with the help of trained research assistants on the basis of semi-structured questionnaires. They covered 35 schools (both primary and lower secondary) in major coastal villages, most at least with some fishing activities, which together had a total pupil population of 4481 in Gambia and 8534 in Senegal (Sall and Nauen, 2011). Schools not responding to at least 70% of the items were not considered in the analysis. A total of 81 informants contributed their views to the needs assessment. They included not only teachers and school inspectors, but also NGOs, representatives of fisher organisations, media professionals, parents and others. Ten particularly interested schools were finally selected for participation in the development and testing of teaching aids to support introduction of the ecosystem approach to fisheries (EAF) and general sustainability principles into the curriculum. Five schools were in Gambia (Serrekunda, Tanji and Gunjur) and five schools were in Senegal (Hann and Cayar).

The needs assessment clearly brought out the importance of building in references to traditional culture into creating new learning experience around EAF, but also the significant difficulties associated with often very large class sizes, in some cases exceeding 60 pupils/class and classes so big that the teachers had to take turns to dispense class to groups separately in the morning and afternoon respectively. The engagement of the teachers to work and remain open to testing new approaches was all the more remarkable. Frequent contacts with the local MM coordinator, including face-to-face meetings whenever possible, certainly contributed significantly to this mobilisation as communication with people from outside the community and particularly using information technology other than mobile phones is the exception.

During the duration of the pilot activities, essentially between July 2011 to July 2012, the alignment of different demands was a major challenge. It involved working at least in two official languages (French and English, often complemented by Wolof (in Senegal) and Mandinka (in Gambia) on

- the management of expectations in the schools for capacity building and new opportunities in relation with the resources available from the FAO and complemented by contributions of MM,
- allocating enough resources for workshops and exchange between teachers that supported building their professional capacity and more engaging learning for the pupils through excursions and other forms, including theatre, role plays etc,

- the need for ensuring a good synergy between the requirements of the FAO expecting a teaching kit that could possibly be used also in neighbouring countries, and the normal rhythm of schooling on the ground in Senegal and Gambia, and not the least
- coping with other frame conditions (elections in Senegal, communication constraints within and between the two countries etc.).

Among the first steps was to provide some basics about marine and coastal ecosystems in the region to the teachers and to introduce them specifically to the key principles of the ecosystem approach to fisheries. Luckily, IUCN (2011) had just finalised an excellent handbook about the marine and coastal ecosystems tailor-made for the region that could serve as foundation reading for environmental features and challenges for non-specialists. While not part of the EAF principles, that was quite important to help create a similar level of basic information and understanding about the environment among the teachers involved.

During a two-day preparatory workshop with several teachers from each of the participating schools, the more socio-economic grasp of the five EAF principles was then explained. The teachers were also provided with a written draft of a work book for about EAF. In addition to a relatively simple explanation of each principle, the draft work book proposed questions and exercises for the teachers to use in the different subject matters during the testing phase of the materials. Other materials offered were the Nansen flyer and poster about what constituted desirable and undesirable conditions and outcomes. Moreover, MM had developed a fish ruler in collaboration with local scientists, which indicated the biological minimum length of the major fish species in each country. The fish ruler printed on flexible plastic bands could be used for measuring fish on the beach or in the market to check whether the individuals had the right size for reproduction or were still babies.

Additionally other posters about minimum fish size and species composition of healthy and overfished ecosystems provided visual aids for the teachers, known beforehand to be short of books and particularly visual teaching aids. Free prints of google maps of fish landing sites for each school were also made available to the teachers as an entry to geo-referencing and generally systematising observations. As most schools did not have easy access to the internet at the time of the pilots, drawing attention to other free internet resources did not have much immediate impact.

During the preparatory workshop the teachers already examined critically all draft materials and then developed some planning for how to organise the tests in their respective schools. As the official time allocating for environment education was not even ensured for all age classes in Senegal and Gambia, the teachers devised strategies how to use the content in other subject matters, e.g. in

French or English language classes during essay writing, training argumentative writing and in other subjects from life and earth sciences (Senegal) to social and environmental studies (Gambia).

In addition, the teachers were provided with very simple guidelines on how to monitor progress and use individual and group techniques to assess responses in class. Three evaluation sheets were provided: for school inspectors, for teacher satisfaction and for the teachers' assessment of academic progress of their pupils.

In the event, MM provided teachers with compact digital cameras as a means to keep track of their work and to showcase it better for collective learning. A few schools without computers were also provided with one (especially in Gambia). A lot of emphasis was placed on warming the teachers to the advantage of using visual documentation both for their own use and for keeping track and communicating with others. At the time of the pilots, these tools were still not yet widely available and not integrated in the general routine.

The teachers in Senegal and Gambia chose one of their group as the overall focal point and one in each location where there was more than one school in order to keep in touch and exchange informally among themselves and with the local MM coordinator of the pilots.

For the next at least two to four months depending on the date of the launch workshop, the materials were tested in class, often in combination with field trips to beach landing places, markets and offices of the fisheries administration. To the extent possible, teachers kept in touch among each other and with the local MM coordinator.

Shortly before the end of the school year, review workshops were convened in Senegal and Gambia respectively to analyse the experience made and draw conclusions for the pedagogical approach and the content and format of the teaching kit. Not all school teachers used all components of the teaching kit. The monitoring sheets were hardly used at all, while the fish ruler, the posters and other visual materials had been put to test. Nevertheless, the teachers cited observed evidence, some even documented by photos, that the more engaging methods and visual aids had been well accepted by the pupils and generated good academic results. On the strength of the detailed and constructive criticism and feedback from the teachers, most materials were revised and the final content of the teaching kit decided and prepared in close concertation with FAO, which has meanwhile produced a more sophisticated version of the teacher work book on the basis of the revised material.

Interestingly, the teachers in both Senegal and Gambia decided that they wanted to continue working with the teaching kit in order to continue consolidating the experience. This initiative has been encouraged and supported by MM through e.g. photography training, sporadic animation visits

and review and consolidation workshops in Gambia (Sall, 2012) and Senegal (Anon., 2013) in order to continue capitalising on the initial effort by the schools. Special efforts have been made in this context to associate school inspection services more formally with these exercises in order to ensure that there is a greater chance to take the lessons on board in a wider institutional context and assure the principals and teachers that their initiative is endorsed and supported.

It is encouraging to observe that several of the schools, particularly those with dynamic principals convinced of the usefulness of the content and approach, two years after the official completion of the FAO pilots, are still using the tools and taking fresh initiatives, particularly, but not only, for special events, such World Environment Day (5 May) or World Oceans Day (8 June) and continue engaging e.g. with NGOs and public services about applying the 5 key principles of the ecosystem approach to fisheries.

Outlook

While we agree with the empirical literature that change in schools is brought about most effectively by reform processes with strong institutional backing (Hunt, 2012; Fullan, 2002), we do observe that the institutional reform processes were very slow in the two countries in which we supported pilot activities for FAO – EAF Nansen Project. That meant a certain discouragement or at least no positive incentive for school inspectors, principals and teachers to keep up their commitment to improving teaching. Moreover, while they see significant amounts of donor money spent on regional projects or restructuring of education ministries, little or nothing trickles down to where education happens in schools.

There is little expectation that the shortfall of teaching staff can be remedied any time soon. Indeed, the age structure of teachers in many schools already exacerbates the shortfalls and has led to some teachers in pension age to still continue serving, at least in reduced form. So, while limited support to schools without strong institutional support is not ideal, it does help maintain the morale of the principals and teachers in the schools concerned. Given the global figures about levels of schooling and drop out rates, even modest support spells additional opportunities to kids to acquire basic competencies and connect more easily to out-of-school opportunities for learning through the social media and other avenues that are becoming available as electricity is reaching even previously isolated villages as Cayar in Senegal or Gunjur in Gambia.

In this vein, we are adopting a twin strategy e.g. in support of the school inspection of Greater Dakar interested in lending more institutional support for the capacity building and reform process on the ground, but seriously constrained by resources (people, time, finance), while also continuing with less formal support to committed schools.

On the one hand, in pursuit of a memorandum of understanding spelling out collaboration for change, we are co-designing a longer-term support project for strengthening the capabilities of all primary schools in Hann, just outside Dakar, Senegal, based on the interconnected principles laid out by Fullan (2001) and relevant for making sustainability education robust through a more extensive pilot activity:

1. Moral purpose
2. Understanding the process of change
3. Improving relationships
4. Creating (and sharing) knowledge (social capital)
5. Sharing and coherence making - it aligns welcome diversity to achieve our purpose.

To carry this out successfully requires support that is not immediately available and guaranteed over at least a couple of years. This is why together with the school inspection, MM is also pursuing a more opportunistic bottom-up approach of building on the local competencies and engaging self-help and participation as illustrated in a workshop in Dakar (Anon, 2013). While expected to be less effective than a fully supported project, such an approach is still helpful to sustain the commitment of the schools already investing in some improvements following the FAO-EAF Nansen Project pilots. Indeed some other schools signal interest to join the budding network and mobilise local resources to explore new developments in the curriculum and in teaching methods.

It is hoped that the new educational priorities adopted at the recent Regional Coastal and Marine Forum in West Africa (Mundus maris in Senegal, 2013) finally improve the framework conditions for environment and sustainability teaching in the participating countries. That would provide new perspectives of linking concepts and results of scientific research with local culture, the arts and practical insights in schools so that children get more and better access to education and opportunities for collective development in their communities.

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