**Overview of the innovation**
This project piloted a ‘green school initiative’ at 100 primary and secondary schools across four districts of Rwanda. All schools established school gardens, which were used for beautification of the school grounds, income generation, as well as a teaching and learning resource for subject teaching. Eco-school committees were formed at these schools and an environmental curriculum was introduced.

Based on previous experience in other countries, the selected schools could choose 4 environmental topics from the following 10 themes: biodiversity, climate change, energy, global perspective, healthy living, litter, school grounds, transport, waste, and water. These 4 themes would form the basis for improving the school’s environmental practices and learning activities.

There was also a strong advocacy element to this project at the national level with the long term aim of integrating environmental education into school curricula.

A total of 243 teachers were trained and 19,093 primary students and 9,941 secondary students benefitted from this project.

The project total budget was GBP 151,891.

**Grant Recipient:**
The project was implemented by the ARAMA foundation with Foundation Saint Dominique Savio.

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**What makes it innovative?**
This initiative has been widely implemented in Europe and previously piloted in Kenya and Uganda but it is new to the Rwandan context and represents a new approach to Education for Sustainable Development in schools.

The use of school gardens to teach subjects such as mathematics, science and social studies was an innovative way to change the way teaching and learning take place, outside of the classroom.

**Relevance to education priorities:**
Main Theme: Skills development

Sub-theme: Effective teaching and learning
The project was closely aligned with the Education for Sustainable Development priorities both within Rwanda and globally.

**Project learning (activity/output to outcomes level)**
- The project gained greater traction and success in those Districts where there was very strong involvement of DEOs and Mayors in the programme. This also resulted in pilot project objectives being included in performance contracts of some decentralised level government staff
- The project necessarily had a strong focus on changing attitudes, behaviours and practices to generate the necessary support for the innovation to work.

**Project outcomes and reflection on monitoring and evaluation**
The evaluation was an observational design with baseline and end-line studies. The effectiveness of the impact of the environmental curriculum on students was measured by a survey of their knowledge, attitude and practice among 2509 students at 20 schools (16 primary and 4 secondary), sampled from the 100 involved in the project. In addition an environmental
assessment questionnaire was given to head teachers in all 100 schools, along with questions on the environmental curriculum (in schools).

At the school level, 84% introduced at least 4 environmental or climate change themes in the curriculum up from 49% at baseline, and all had a school garden (96% had at baseline), though the basis of these results is unclear. Slight improvement was found on mean scores for student knowledge (mainly at primary grades); some improvement in student attitude mean scores (but not at secondary grades) and improvements in mean student practice scores (that reduce in size across the grades).

This descriptive evaluation with baseline and end-line studies lacks transparency and the surveys used have no demonstrable validity and reliability [the student survey is based on an existing international instrument but not validated for Rwanda]. The results quoted above are not supported by sufficient analysis to attribute statistical significance to the improvements given, or indeed to quote the actual student mean score differences between baseline and end-line.

**Conditions for success**

The main challenge that this project faced was that the environmental education programme was seen as extra-curricular. In some schools, this resulted in limited time available for learners to engage in the environmental activities and lack of support from the school management as it was not always seen as an educational priority. There was also a mixed response to the programme by local education officers, with some lack of clarity on their expected role with regard to the eco-school committees. Broader policy support to mainstream environmental learning in the curriculum and institutionalise the necessary support functions is a condition for long-term success of the initiative.

**Scale up and sustainability considerations**

The proposed model for replicating the innovation in another 100 schools in the same geographical areas is realistic and feasible, provided that external funding is available. Capitalising on a
cadre of previously trained people and the existing ownership by GoR decentralised staff is a cost effective way of moving to the next 100 schools. It will be important to attract project funding for this and ARAMA will need to remain involved. It is good that potential funding sources are identified in ARAMA’s scale-up plan, but the chances of success to attract funding from these agencies is not clear from the document.

The main problem is that the scale-up model is not clear. If interpreted correctly, by distilling information from different parts of the document, the scale up model is the same as the pilot model plus (i) the development of a policy framework, (ii) public awareness campaigns and (iii) national environment-infused curricula. If the above assumptions are correct, it means the package is becoming heavier instead of lighter. A project that is already intense in terms of the level of support needed, will be difficult to scale-up if more resources are required as the package is further extended while at the same time reaching more schools. The document is simply not clear enough to be able to establish what the actual model consists of.

There is also a lack of clarity relating to the longer term scale-up perspective (i.e. beyond the initial 100 schools) of establishing model schools and training Master Trainers to establish and support these model schools. This is an entirely new model, not tested in the pilot, which raises two major questions: (i) if this is the desired model, why still go for scaling up to an additional 100 schools according to the old model - if the model as such will cease to exist by the end of the initial scale up phase?, and (ii) is there any proof that the model school concept will work? There is a lack of analysis in terms of the anticipated impact of the new model. There is also no information about the mechanisms through which the spread to surrounding schools will work and what the resource implications of ensuring this spread are.

The focus on ownership of and partnership by GoR institutions is good and appropriate. However, current discussions have not resolved the general question around the responsibilities given to a wide range of GoR organisations and the extent to which they want to become part of scale up and embedding.

A critical entry point to create wider systemic impact will be the curriculum implementation.
It is very good to see that discussions are happening between ARAMA and REB Curricula and Pedagogical Materials Development Department (CPMD) and this could lead to the development of curriculum guides and related teacher training. However, the discussion of the curriculum remains vague. There is no reference to the curriculum review and implementation process. Is environmental education actually covered by the new curriculum and how do ARAMA’s activities fit in? Have they been part of the pilot, or does it concern a plan for scale up? If the latter, it may be too late, as the curriculum review has already finished. It is also not clear whether the College of Education (CoE) and REB/CPMD are happy to play the roles assigned to them in the scale-up document. The curriculum issues are very complicated as this is about curriculum implementation work across subjects rather than for one subject only. A more comprehensive and clear analysis of the curriculum implementation work is required.

The partnership with the CoE seems sensible in order to ensure embedding environmental topics within formal teacher training. It is unclear what the status of the discussions with the CoE is, and whether these ideas are indeed supported by the CoE. Similarly, the partnership with the Rwandan Environment Management Agency (REMA) is a very good step and is very interesting as it creates partnerships between GoR agencies across sectors. The role of REMA could even go beyond the narrow focus on planned awareness raising activities and ARAMA should consider broadening this partnership.

Cost Considerations
The economic analysis provides unit costs for Training of Trainers (ToT) and various elements of support and Technical Assistance. Although the costs per year do seem reasonable (GBP 14 per trainer, GBP 5 per school, GBP 1,127 per District), it is not clear what this will buy exactly. It also seems the entire package will be more expensive than the combined calculated unit costs as important cost elements are missing. For example: while the document mentions that the curriculum work is the most expensive cost element, no cost analysis for this component is included.

Apart from the unit costs, there is no real discussion about the Value for Money of the scale-up plans. Even if known how much it costs, it is impossible to assess how this is cost-effective in relation to the anticipated outcomes and how this is better than alternative use of funds. Related to this, there is no discussion how these expenses would be part of the GoR budget and how the Ministry can spend its money effectively on an eco-school initiative. The financial sustainability of the innovation in a GoR context remains questionable.

If this innovation will be scaled up, there clearly is a need for ARAMA involvement in the medium term and ARAMA must indicate if it is able to secure the required funding for this.

Immediate Next Steps
- ARAMA to further work on its Scale up and Sustainability Plan to make it a real basis for action. This should include an improved economic analysis.
- ARAMA to discuss with relevant Ministry departments to ensure scale up of the intervention.
- ARAMA to discuss with REB CMD and the Technical Working Group on Curriculum, Materials and Assessment to plan for the way forward in terms of curriculum implementation and assess the possibilities for ARAMA to play a role in teacher training for the new curriculum.
- ARAMA and the College of Education to discuss sustainable ways to train teachers on environmental topics in line with the new curriculum.
- ARAMA to further strengthen and broaden its partnership with REMA.
- ARAMA to identify scale-up funding from external sources.
- DFID to assess how supporting scale up of this project could fit within its wider objectives around climate change and the environment.