Recommendations for assessing the carbon footprint of teacher professional development programmes

About this document

This document outlines key recommendations for making the design and delivery of education programmes more environmentally friendly. It contains a series of recommendations aimed at programme designers, implementers, participants, donors and funders, as well as carbon accounting specialists and government agencies.

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Background to the recommendations

The Secondary Teachers English Language in Rwanda (STELIR) programme is a large-scale blended teacher professional development programme aiming to improve the English language proficiency of lower secondary school teachers in Rwanda. A process framework for calculating the carbon footprint of education programmes was developed and piloted using STELIR as a case study, in order to provide an assessment of the environmental impact of the programme. The case study adopted a particular focus on understanding the relative environmental impact of the different models of delivery within STELIR, which encompass face-to-face training, online training, and continuing professional development activities. The results and implications of calculating the carbon footprint of STELIR are outlined in full in a case study report.

Building on the case study report, the findings have enabled the research team to make environment-related recommendations that are relevant to the design and delivery of teacher professional development or similar educational programmes, particularly those that are considering using technology. Recommendations are made at different levels and have been divided into two main groups:

Programme-related recommendations, which aim to minimise the carbon emissions generated by education programmes like STELIR.

Measurement-related recommendations, which aim to improve the ways in which carbon emissions are measured and carbon footprints assessed.

In each case, recommendations are further organised by the stakeholder groups to which they apply, with recommendations made to programme designers, implementers, participants, donors and funders, as well as carbon accounting specialists and government agencies.

Programme-related recommendations

Programme designers should:

1 **Re-use materials, particularly digital devices, wherever possible.** Purchasing new equipment, particularly digital hardware, dramatically increases carbon emissions through manufacturing. Where possible, designers should try to find appropriate uses for devices beyond the lifetime of a single project. However, there are cases in which procuring new devices for a programme may be essential to guarantee programme quality and equity, especially in LMICs; participants' own devices or devices that have been left over from other programmes may not use operating systems that are compatible with project activities, and some participants using more up-to-date devices that others may result in inequitable delivery. To achieve a balance between these considerations, programme implementers should carefully assess participants' device access and provide new ones where necessary, rather than buying a new set for the entire cohort as a default option. Where buying new materials is essential, effort should be made to procure these as locally as possible to reduce transportation-related emissions (though it is important to recognise that even locally procured devices are likely to have global manufacturing supply chains).

2 **For face-to-face delivery, use locations that are easily accessible by public transport and require participants to make shorter journeys.** Transportation is a significant contributor to the carbon footprint of face-to-face teaching and learning. Utilising locations that require the minimum amount of travel for the majority of participants and staff will reduce its impact and improve participant wellbeing, and using locations that are easily accessible through public transport will reduce the emissions of personal vehicles, which are less environmentally friendly.

3 **Integrate programme activities within existing tools and practices where sensible.** Reducing the number of additional activities and tools introduced by a programme will limit the carbon emissions it generates compared to the business-as-usual scenario. Designing programme activities around participants' regular schedule, such as delivering teacher training at their school, will help to reduce the number of carbon-generating activities that are added by a programme.

4 **Integrate programme activities within existing tools and practices where sensible.** Reducing the number of additional activities and tools introduced by a programme will limit the carbon emissions it generates compared to the business-as-usual scenario. Designing programme activities around participants' regular schedule, such as delivering teacher training at their school, will help to reduce the number of carbon-generating activities that are added by a programme.

Programme implementers and participants should:

5 Treat all programme resources with care to reduce the likelihood of them having to be replaced. The emissions associated with new equipment and digital devices are significant; using them carefully and returning them at the end of the programme will extend their lifespan and reduce the amount of new equipment needed.

6 Take public transport to and from programme locations where possible. In instances where transportation is a requirement of the programme, using public transport instead of personal vehicles will reduce the carbon footprint of each journey. Programme locations should allow as much as possible the use of public transportation to support implementers and participants in this endeavour.

Measurement-related recommendations

Programme implementers and participants should:

7 Establish data collection processes to regularly obtain data relevant to emissions calculations, and integrate them within existing monitoring, evaluation and learning strategies. Some data points relevant to calculating the carbon footprint of programmes are not routinely collected as part of regular programme monitoring, such as vehicle specifications used for programme transportation. Ensuring that these data points are integrated with existing data monitoring and collection processes will ensure carbon footprint assessments can be undertaken with little-to-no extra data collection needed and at any stage of implementation.

8 Where possible, align data collection with available emission factors for commonly recurring emissions so that data can be easily transferred and utilised within carbon footprint assessments. Data that is regularly collected as part of delivering teacher professional development programmes, such as information around transportation to and from locations, should be collected in line with the data requirement of their relative emission factor. In this case, data on the distance travelled in km alongside vehicle specifications should be collected. This means data collection can be streamlined with one data point being relevant for multiple purposes, such as outcome monitoring and carbon footprint assessments, instead of having to manipulate data for each purpose.

9 **Implement similar studies across a wider range of low- and middle-income contexts.** Undertaking carbon footprint assessments of other teacher professional development or education programmes in these contexts will help determine whether the findings and recommendations to emerge from this case study have wider applicability or are specific to this particular context.

Donors and other programme funders should:

10 **Encourage this or similar environmental assessment activities.** As policies linking work to climate change become more widespread across the education sector, there may be increased pressure to engage with environmental impact assessments such as carbon footprint assessments. Encouraging realistic, simple and relatively low intensity assessment approaches will offer significant insight in this area while ensuring that programme budgets and funding are not diverted away from delivering increased impact on learning outcomes.

11 **Prioritise supporting individuals and organisations to develop context-specific emission factors relevant to low- and middle-income countries.** While several databases for emission factors exist, these are primarily based in high-income contexts. Supporting, financially or otherwise, the development of emission factors in low- and middle-income contexts will help provide a strong base to improve the accuracy of carbon footprint assessments in these contexts. Long term, this will ensure that findings and recommendations resulting from such assessments can be asserted with much greater certainty.

Carbon accounting specialists and government agencies should:

12 **Ensure that all emission factors and associated data are open and free to access online.** Making this data as accessible as possible will enable environmental impact assessments and analyses to be more easily and widely integrated into education programming in low- and middle-income contexts by helping to overcome the lack of available contextual data which currently hinders their inclusion.

13 **Routinely include the manufacturing emissions associated with purchasing new hardware in carbon footprint assessments.** The STELIR case study demonstrates the significance of these emissions and how their inclusion is necessary to most accurately reflect environmental impact. While this is not common practice at the moment, it is important to ensure this significant impact is not being overlooked, especially in low- and middle-income contexts where technology for education is being procured at an increasing rate.

14 **Provide greater transparency around how current emission factors have been developed.** It is not always immediately clear what specific activities or processes are accounted for within publicly available emission factors, which undermines the certainty of any results. Greater transparency around the methodology to derive emission factors will ensure that their alignment and relevance to specific programme activities is clearer. This will help avoid any unintended duplication or omission of carbon-generating processes and activities within carbon footprint assessments.