**Additional file 3: Scoring of the implementation indices**

# Implementation outcomes measured in the Food Ambassador study

## Index 1 Implementation dimension 1: Quality of delivery

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| **Aspect of dimension/construct** | **Data source** | **Question/registry** | **Scoring** | **Variable name in analysis file** |
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| Session effectiveness (clear and responsive presentations) | Paper-based evaluation of the September trainings (food ambassadors (a) and after-school leaders (SFO leaders)1 (s)) | To what degree did the presentations about the project provide a clear understanding of the following: – Clarity around the aim of the project– Clarity around the project's relevance for the school– Clarity about what is expected of you in the project– Clarity about what the results will be used for(Response options: Not at all; To a small degree; To some degree; To a large degree) | 1 point for each, if “to a large degree” Maximum 8 points | d1\_a1 to d1\_a4d1\_s9 to d1\_s12 |
| Session effectiveness (meeting content responsive/sensitive) | Paper-based evaluation of the September trainings (food ambassadors (a) and SFO leaders (s)) | To what degree did you think that the meeting was:– too theoretical?– contained too much information?– only contained already known stuff?(Response options: Not at all; To a small degree; To some degree; To a large degree) | 1 point for each, if “not at all” Maximum 6 points | d1\_a5 to d1\_a7d1\_s13 to d1\_s15 |
| Session effectiveness (“sensitive to needs”) | Paper-based evaluation of the September trainings (food ambassadors (a) and SFO leaders (s)) | To what degree did you think that the meeting offered opportunities to share experiences? (Response options: Not at all; To a small degree; To some degree; To a large degree) | 1 point if “to a large degree”; 0.5 point if “to some degree”Maximum 2 points | d1\_a8\_shared1\_s16\_share |
| Implementer preparedness and enthusiasm  | Paper-based evaluation of the September training sessions (food ambassadors (a) and SFO leaders (s)) | To what degree did you think that the meeting:– seemed well prepared?– inspired participation in the project?(Response options: Not at all; To a small degree; To some degree; To a large degree) | 1 point each if “to a large degree”Maximum 4 points | d1\_a17 to d1\_a18d1\_s19 to d1\_s20 |
| Implementer enthusiasm | Web-based survey after completion of school workshop (food ambassadors) | How engaged was the project leader about the topics during the September ambassador training? (Response options: Very unengaged; Unengaged; Neither unengaged nor engaged; Engaged; Very engaged; Not relevant (did not participate)) | 1 point if “engaged or very engaged”Maximum 1 point | d1\_a21 |
| Session effectiveness (generates knowledge) | Web-based survey after completion of school workshop (food ambassadors) | Did you receive sufficient training to conduct the teacher workshop?(Response options: No; Partly; Yes; Not relevant (did not participate)) | 1 point if “yes”Maximum 1 point | d1\_a22 |
| Session effectiveness (generates knowledge) | Web-based survey after completion of school workshop (food ambassadors or SFO leader) | Did you receive sufficient training to conduct the SFO workshop?(Response options: No; Partly; Yes; Not relevant (did not participate)) | 1 point if “yes”Maximum 1 point | d1\_as23 |
| Session effectiveness (generates knowledge) | Web-based survey after completion of school workshop(food ambassadors) | Did you get a good enough overview of the knowledge base for the guideline to be prepared for questions from teacher colleagues?(Response options: No; Partly; Yes; Not relevant (did not participate)) | 1 point if “yes”Maximum 1 point | d1\_a24 |
| Session effectiveness (generates knowledge) |  | Did you get a good-enough overview of the knowledge base for the guideline to be prepared for questions from SFO colleagues?(Response options: No; Partly; Yes; Not relevant (did not participate)) | 1 point if “yes”Maximum 1 point | d1\_as25 |
| Sum quality of intervention delivery |  |  | Maximum 25 points | Number of points divided by relevant number of variables |

## Index 2 Implementation dimension 2: Participant responsiveness

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| **Aspect of dimension/construct** | **Data source** | **Question/registry** | **Coding** | **Data variable for analysis** |
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| Participation and involvement (responsiveness to request) | Observation/checklist by principal investigator (PI) | Did the ambassador complete the evaluation form provided in paper at the September training?(Response options: Yes/No) | 1 point if “yes” | d2\_a1 |
| Participation and involvement | Observation/checklist by PI | Response time for download of workshop material (from WeTransfer) by the ambassador(Response options: Yes, within 2 days; Yes, within a week (before deadline); Yes, but after deadline; never) | 1 point if “yes, within 2 days”; 0.5 point if “yes within a week” | d2\_a2 |
| Participation and involvement | Observation/checklist by PI | Did the ambassador send in the action plan after the teacher workshop? (Response options: Yes, before deadline; Yes, but after deadline; Never) | 1 point if “yes, before deadline”; 0.5 point if “yes, but after deadline” | d2\_a3 |
| Participation and involvement (responsiveness to request)  | Observation/checklist by PI | Did the SFO leader complete the evaluation form provided in paper at the September training?(Response options: Yes/No) | 1 point if “yes” | d2\_s4 |
| Participation and involvement | Observation/checklist by PI | Did the ambassador (or alternatively the SFO leader) send in the action plan after the SFO workshop? (Response options: Yes, before deadline; Yes, but after deadline; Never) | 1 point if “yes, before deadline”; 0.5 point if “yes, but after deadline” | d2\_s5 |
| Participation | Web-based survey after completion of school workshop (food ambassador) | Did the teachers participate actively during the school workshop?(Response options: No, only a few; Yes, but fewer than half of them; Yes, more than half of them; Yes, nearly all) | 1 point if “yes, nearly all” | d2\_a6\_dics |
| Participation | Web-based survey after completion of SFO workshop(food ambassador/SFO- leader) | Did the SFO staff participate actively during the SFO workshop?(Response options: No, only a few; Yes, but fewer than half of them; Yes, more than half of them; Yes, nearly all)  | 1 point if “yes, nearly all” | d2\_s7\_disc |
| Engagement | Web-based survey after completion of school workshop (food ambassador) | Was the short film about lunch time allowance from the Directorate of Health shown during the teacher workshop?(Response options: No; Yes) | 1 point if “yes” | d2\_a8\_film |
| Engagement | Web-based survey after completion of SFO workshop(food ambassador/SFO leader) | Was the short film about food safety from the Food Safety Authority shown during the SFO workshop?(Response options: No; Yes) | 1 point if “yes” | d2\_s9\_film |
| Participation and involvement (maintaining the interest or attention of participants) | Web-based survey after completion of school workshop(food ambassador) | Did the workshop format work well as a method to create interest in the topic among teacher colleagues?(Response options: No; Partly; Yes) | 1 point if “yes” | d2\_a10\_format |
| Participation and involvement (maintaining the interest or attention of participants) | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | Did the workshop format work well as a method to create interest in the topic among SFO colleagues?(Response options: No; Partly; Yes) | 1 point if “yes” | d2\_s11\_format |
| Engagement | Post-intervention survey (school principals) | Has the school leadership been informed of the brochure about packed food developed in the study?(Response options: No; Yes; Yes, and it has already been distributed to parents)  | 1 point if “yes, and it has already been distributed to parents”; 0.5 point if “yes” | d2\_p12\_brochure |
| Engagement | Post-intervention survey (school principals) | Has any parent-directed activity related to meals been conducted in connection with the Food Ambassador study?(Response options: No; No, but we would like to do it in 2020; No, but we have plans to do it in 2020; Yes) | 1 point if “yes”; 0.5 point if “no, but we have plans to do it in 2020” | d2\_p13\_parents |
| Engagement | Post-intervention survey (school principals) | Has the school conducted any activity for the pupils related to meals in connection with the Food Ambassador study? (Response options: No; No, but we would like to do it in 2020; No, but we have plans to do it in 2020; Yes) | 1 point if “yes”; 0.5 point if “no, but we have plans to do it in 2020” | d2\_p14\_pupils |
| Engagement | Post-intervention survey (school principals) | How engaged was the food ambassador in the project period?(Response options: Very unengaged; Unengaged; Neither unengaged nor engaged; Engaged; Very engaged; Don’t know) | 1 point if “very engaged” or “engaged” | d2\_p15\_amb\_eng |
| Engagement  | Post-intervention survey (school principals) | Has participation in the study entailed any changes in routines or practice at school in the last 6 months?(Response options: No, the school has not been able to prioritize this work in the last 6 months; No, the school already had consistently good practice; Yes, the school has done some changes/adjustments to get even better practice; Yes, the school has done several changes/adjustments to get even better practice; Don’t know) | 1 point if “yes, the school has made several changes/adjustments to get even better practice”; 0.5 point if “yes, the school has made some changes/adjustments to get even better practice” | d2\_p16\_change\_school |
| Engagement | Post-intervention survey (school principals) | Has participation in the study entailed any changes in routines or practice at SFO in the last 6 months?(Response options: No, SFO has not been able to prioritize this work in the last 6 months; No, SFO already had consistently good practice; Yes, SFO has done some changes/adjustments to get even better practice; Yes, SFO has done several changes/adjustments to get even better practice; Don’t know) | 1 point if “yes, the SFO has done several changes/adjustments to get even better practice”; 0.5 point if “yes, the SFO has done some changes/adjustments to get even better practice”  | d2\_p17\_change\_sfo |
| Engagement  | Post-intervention survey (school principals) | Are the national guidelines anchored in any of the school’s policy documents?(Response options: No; No, but we plan to do it in 2020; Yes, new or strengthened anchoring was done in connection with the Food ambassador study; Yes, it has been anchored at our school for some/several years already; Don’t know) | 1 point if “new or strengthened anchoring was done in connection with the Food ambassador study” | d2\_p18\_guideline |
| Participation and involvement | Post-intervention survey (SFO leaders) | Did the SFO leader participate in the SFO workshop?(Response options: No; Yes; There was no workshop) | 1 point if “yes” | d2\_s19\_sfo\_lead |
| Engagement | Post-intervention survey (SFO leaders) | Has SFO conducted any activity for the pupils related to meals in connection with the Food Ambassador study? (Response options: No; No, but we would like to do it in 2020; No, but we have plans to do it in 2020; Yes) | 1 point if “yes”; 0.5 point if “no, but we have plans to do it in 2020” | d2\_s20\_pupil |
| Engagement | Post-intervention survey (SFO leaders) | Has participation in the study entailed any changes in routines or practice at SFO in the last 6 months?(Response options: No, SFO has not been able to prioritize this work in the last 6 months; No, SFO already had consistently good practice; Yes, SFO has done some changes/adjustments to get even better practice; Yes, SFO has done several changes/adjustments to get even better practice; Don’t know) | 1 point if “yes, the SFO has done several changes/adjustments to get even better practice”; 0.5 points if “yes, the SFO has done some changes/adjustments to get even better practice” | d2\_s21\_change\_sfo |
| Engagement | Post-intervention survey (SFO leaders) | Is the national guideline anchored in any of SFO’s policy documents?(Response options: No; No, but we plan to do it in 2020; Yes, new or strengthened anchoring was done in connection with the Food Ambassador study; Yes, it has been anchored at our school for some/several years already; Don’t know) | 1 point if “new or strengthened anchoring was done in connection with the Food Ambassador study” | D2\_s22\_achor |
| Sum participant responsiveness |  |  | Maximum 22 points |  |

## Index 3 Implementation dimension 3: Dosage

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| **Aspect of dimension/construct** | **Data source** | **Question/registry** | **Coding** | **Data variable for analysis** |
|  |  |  |  |  |
| Dose received, principal | Observation/checklist by PI | Principal attendance at information meeting (June) | 1 point if “yes” | d3\_a1 |
| Dose received, SFO leader | Observation/checklist by PI | SFO leader attendance at– information meeting (June)– SFO training (September) | 1 point for each “yes”; but for the SFO training 0.5 point if a step-in attended instead of the SFO leaderMaximum 2 points | d3\_s2d3\_s3 |
| Dose receivedFood ambassador | Observation/checklist by PI | Food ambassador attendance at– information meeting (June)– first ambassador training (September)– second ambassador training (November) | 1 point for each “yes”; : 0.5 point if a step-in attended Maximum 3 points | d3\_a4d3\_a5d3\_a6 |
| Dose received, determined by no. of teachers reached in workshop | Web-based survey after completion of school workshop (food ambassadors) | Proportion of class teachers attending the school workshop, as calculated by the following two questions in the questionnaire:How many class teachers are there at your school?How many class teachers participated in the workshop? | 1 point if ≥80% of the class teachers participated | d3\_a7\_part\_score |
| Dose received, determined by nr of SFO staff reachedin workshop | Web-based survey after completion of school workshop (food ambassador or SFO leader) | Proportion of SFO staff attending the SFO workshop, as calculated by the following two questions in the questionnaire:How many SFO staff are there at your school?How many SFO staff participated in the workshop? | 1 point if ≥80% of the SFO staff participated | d3\_s8\_part\_score |
| Dose received, determined by scope of attendees | Web-based survey after completion of school workshop(food ambassadors) | Participation by additional employee groups during the school workshop?(Response options: Yes; No) | 1 point if “yes” | d3\_a9\_add |
| Sum dosage |  |  | Maximum 9 points  |  |

## Index 4 Implementation dimension 4: Fidelity

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| **Aspect of dimension/construct** | **Data source** | **Question/registry** | **Coding** | **Data variable for analysis** |
|  |  |  |  |  |
| School-level fidelity | Web-based survey after completion of school workshop(food ambassador) | When was the school workshop conducted?(Response options: Never; After the November training; After deadline but before November training; Before the deadline 1 November) | 1 point if before the deadline 1 November | d4\_a1\_date |
| School-level fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | When was the SFO workshop conducted?(Response options: Never; After the November training; after deadline but before November training; Before the deadline 1 November) | 1 point if before the deadline 1 November | d4\_s2\_date |
| Ambassador fidelity | Web-based survey after completion of school workshop (food ambassador) | Had the person who led the school workshop participated in the September ambassador training?(Response options: No; Yes) | 1 point if “yes” | d4\_a3\_train |
| Ambassador fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | Had the person who led the SFO workshop participated in one of the September trainings?(Response options: No; Yes) | 1 point if “yes” | d4\_s4\_train\_corr |
| School-level fidelity | Web-based survey after completion of school workshop (food ambassador) | Were separate workshops conducted for meals during school hours and during SFO, respectively? (Response options: Yes; No, they were combined; Workshop only for school hours; Workshop only for SFO)To assess scoring, check comment in follow-up question about why the workshops were combined (e.g. small school OK; no reason provided is not OK) | 1 point if yes, and if a merger is well reasoned | d4\_a5\_separate |
| School-level fidelity | Web-based survey after completion of school workshop(food ambassadors) | How much time was set aside for the teacher workshop (approximately)?(Response options: ≤45 min; 60 min; 1.25 hours; 1.5 hours; 1.75 hours; 2 hours; >2 hours) | 1 point if ≥1.5 hours  | d4\_a6\_time |
| School-level fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | How much time was set aside for the SFO workshop (approximately)?(Response options: ≤45 min; 60 min; 1.25 hours; 1.5 hours; 1h.75 hours; 2 hours; >2 hours) | 1 point if ≥1.5 hours | d4\_s7\_time |
| Ambassador fidelity | Web-based survey after completion of school workshop (food ambassadors) | Was an introduction to the school workshop given?(Response options: No; Yes, without use of provided PowerPoint (ppt); Yes, with use of provided ppt; Yes, with use of a ppt adjusted to own needs) | 1 point if “yes, with use of provided ppt” or “yes, with use of a ppt adjusted to own needs” | d4\_a8\_intro |
| Ambassador fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | Was an introduction to the SFO workshop given?(Response options: No; Yes, without use of provided ppt; Yes, with use of provided ppt; Yes, with use of a ppt adjusted to own needs) | 1 point if “yes, with use of provided ppt” or “yes, with use of a ppt adjusted to own needs” | d4\_s9\_intro |
| Ambassador fidelity | Web-based survey after completion of school workshop(food ambassador) | Did each workshop participant fill in the checklist early on in the workshop?(Response options: No; Yes) | 1 point if “yes” | d4\_a10\_checkl |
| Ambassador fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | Did each workshop participant fill in the checklist early on in the workshop?(Response options: No; Yes) | 1 point if “yes” | d4\_s11\_checkl |
| Ambassador fidelity | Web-based survey after completion of school workshop (food ambassadors) | How many of the reflective questions in the guide were used during the workshop?(Response options: None, or nearly none; Fewer than half; about half; More than half; All, or nearly all) | 1 point if “all or nearly all”; 0.5 point if “more than half” | d4\_a12\_refl |
| Ambassador fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | How many of the reflective questions in the guide were used during the workshop?(Response options: None, or nearly none; Fewer than half; About half; More than half; All, or nearly all) | 1 point if “all or nearly all”; 0.5 point if “more than half” | d4\_s13\_refl |
| Ambassador fidelity | Web-based survey after completion of school workshop (food ambassador) | Was there enough time to sum up the areas that you would like to follow up (during school workshop)?(Response options: No; Partly; Yes; Not relevant/nothing to follow-up) | 1 point if “yes” | d4\_a14\_sum |
| Ambassador fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | Was there enough time to sum up the areas that you would like to follow up (during SFO workshop)?(Response options: No; Partly; Yes; Not relevant/nothing to follow-up | 1 point if “yes” | d4\_s15\_sum |
| School-level fidelity | Web-based survey after completion of school workshop (food ambassador) | Were the room/facilities you used for the workshop suitable for the purpose?(Response options: No; Partly; Yes; Not relevant) | 1 point if “yes” | d4\_a16\_fac |
| School-level fidelity | Web-based survey after completion of SFO workshop (food ambassador/SFO leader) | Were the room/facilities you used for the workshop suitable for the purpose?(Response options: No; Partly; Yes; Not relevant) | 1 point if “yes” | d4\_s17\_fac |
| School-level fidelity  | Web-based survey after completion of school workshop (food ambassadors) | Did you get support from the principal to gather class teachers for the workshop?(Response option: No; Partly; Yes; Not relevant)  | 1 point if “yes” | d4\_a18\_supp |
| School-level fidelity | Web-based survey after completion of school workshop (food ambassadors) | Did you get support from the principal to gather SFO staff for the workshop?(Response option: No; Partly; Yes; Not relevant)  | 1 point if “yes” | d4\_s19\_supp |
| Ambassador fidelity | Post-intervention survey (school principal) | Has the food ambassador conducted a meeting with the principal about the action plan following the school workshop?(Response options: No; No, but a meeting is scheduled; Yes)  | 1 point if “yes” | d4\_p20\_sch\_meet |
| Ambassador fidelity | Post-intervention survey (school principal) | Has the food ambassador or SFO leader conducted a meeting with the principal about the action plan after the SFO workshop?(Response options: No; No, but a meeting is scheduled; Yes) | 1 point if “yes” | d4\_p21\_sfo\_meet |
| School-level fidelity | Post-intervention survey (school principal) | Has follow-up of the workshop been a topic in a teachers’ meeting after the workshop?(Response options: No; No, but we would like to follow it up; No, but a meeting is scheduled; Yes, held in 2019; Yes, held in 2020) | 1 point if “yes, held in 2019” or “yes, held in 2020” | d4\_p22\_follup\_sch |
| School-level fidelity | Post-intervention survey (SFO leader) | Has follow-up of the workshop been a topic in an SFO staff meeting after the workshop?(Response options: No; No, but we would like to follow it up; No, but a meeting is scheduled; Yes, held in 2019; Yes, held in 2020) | 1 point if “yes, held in 2019” or “yes, held in 2020” | d4\_s23\_follup\_sfo |
| Sum fidelity |  |  | Maximum 23 points |  |

1 The Norwegian abbreviation for the after-school service (“SFO”) is used throughout the document, thus the use of “SFO leader” etc.