MS4SSA ACTION PLAN

MALAWI
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A Malawi delegation attended the MS4SSA conference and workshop at WPI from 16\textsuperscript{th} to 26\textsuperscript{th} May, 2017.

**Delegation**

- **MoEST Headquarters:** Deputy Permanent Secretary for Education - Chief Director, Director for Secondary Education, Principal Education Officer secondary, Principal Planning Officer (Budget)

- **Higher Education institutions:** University of Malawi Dean of Education and a professor of science education; deputy principal of a Teacher training college

**Outcome:** Innovative ideas and T&L materials that could be used to improve STEM education in Malawi
Context

Issue

- Poor student achievement in STEM subjects

Causes:

- Poor student attitude
- Poor teacher attitudes towards MS subject
- Poor teaching methods - didactic with minimal student interaction, limited linkage with outside environment, limited resources
- Inadequate infrastructure - lack of laboratories especially for CDSS
- Inadequate content knowledge among teachers
Existing Initiatives

- A national science teacher In-service training programme since 2004 (SMASSE).

- A new outcomes based curriculum in Secondary Education since 2016

- World Bank, JICA and EU supporting activities to promote student enrolment and retention in STEM programmes in HE institutions
Proposed intervention

Focus on secondary education but with implications for teacher education

- Involve adaptation of approaches, materials and content re-organisation from the MS4SSA project to fit the existing curriculum, initially but with potential to restructure the curriculum in future.

- Nationwide implementation following the SMASSE structures already in place

- Use and strengthening of school cluster system
Nature of interventions

a) Teachers working together planning and teaching using the relevant materials from NJCT and WPI for a whole academic year

b) Provision of career guidance talks to the all students in the target schools

c) Institutionalization of science and robotics clubs where science projects could be implemented

d) Science & Robotics camps for students

e) Science and robotics fairs - Battlecry Malawi

f) Grants competitions for science projects for HE institutions
Target Group

- All Form one Science and Mathematics teachers in all the secondary schools in Malawi (This cohort will progressively be targeted for three years)
  - 4 teachers per school for 836 schools (=3344 teachers)

- All Form One students - approximately 83,000 students.

- Teacher educators in HE institutions and Technical Education Institutions (who will realign TE in view of reforms)
Institutions/partners to be involved

- Government of Malawi partnering with World Bank, European Union, ADB, USAID, JICA, UNICEF, NJCTL, WPI, Rwanda and Lesotho

- Six HE institutions

  - University of Malawi - Chancellor College, Polytechnic, Mzuzu University, Lilongwe University of Science and Technology, Domasi College of Education, Nalikule College of Education

- Selected Secondary Schools (initially before up-scaling nationally)
Coordination Structure

- Coordination structure
Working Committees

1) **Steering Committee** - Chaired by the Ministry of Education and having high ranking policy makers from the various participating institutions

2) **Technical Committee**: One representative from each of the participating institutions, SMASSE secretariat, Ministry of Education

3) **Institutional Project Committees** - With representations from different subject areas within the institution. These will be responsible for the training of teachers and monitoring and supervising them
Initial Activities (1)-

- Ministerial de-briefing
- Formation of Project Committees to include: National Steering Committee, Technical Committee and institutional project teams
- Holding consultations with critical stakeholders
Activities (2) Initial Training

- Training of Technical Committee (facilitated by the node and WPI/NJCTL for 10 days)

- Adaptation of WPI/NJCTL materials, methodology, content relevant to the existing curriculum for Form 1
Training of all Form 1 Science and Mathematics teachers in the division

Involve use of the adapted materials to teach Form 1 Science and Mathematics
Activities (4) - cluster level trainings

- 3 cluster level trainings and teacher reflections in a year

- One reflection and retraining at the end of each term

- Focus on materials relevant for the second term, later third term
Activities (5) - Science Camps and fairs

- One Science camp at the end of Form 1
- The first camp will be for Form 1 students
- One camp to be held at each education division in the first year
- In the second year - Form 1 and 2 students participate etc
Activities (6) – Implementation and Monitoring

- Teachers implementing lessons for a term (3 Months)
- Technical team members monitoring
<table>
<thead>
<tr>
<th>Activity</th>
<th>Dates</th>
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</thead>
<tbody>
<tr>
<td>Formation of steering committee</td>
<td>July, 2017</td>
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<tr>
<td>Formation of technical committee and project committees</td>
<td>July, 2017</td>
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<tr>
<td>Training of the project team members and some core teachers by NJCT/WPI/Rwanda node</td>
<td>August, 2017</td>
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<tr>
<td>Aligning of the course materials with Form 1 Biology, Chemistry, Physics and Mathematics</td>
<td>August, 2017</td>
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<td>Divisional level training</td>
<td>August, 2017</td>
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<tr>
<td>Implementation 1</td>
<td>Sept-Dec, 2017</td>
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<tr>
<td>Cluster level training and reflection</td>
<td>December, 2017</td>
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<tr>
<td>Implementation 2</td>
<td>Jan-April, 2018</td>
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<tr>
<td>Cluster level training and reflection</td>
<td>April, 2018</td>
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<tr>
<td>Implementation 3</td>
<td>April - July, 2018</td>
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<tr>
<td>Divisional reflection and training</td>
<td>August, 2018</td>
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## Timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>Debriefing , Consultations, formation of committees</td>
<td>x</td>
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<tr>
<td>Initial training</td>
<td>x</td>
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<tr>
<td>Subsequent trainings</td>
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<td>x</td>
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<tr>
<td>Implementation</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Cluster level trainings and reflections</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Science fairs/competition( battle-cry Malawi)</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Monitoring and Evaluation</td>
<td>x</td>
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## Proposed Budget

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<thead>
<tr>
<th>Activity</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>Consultations and steering committee meetings</td>
<td>9,707</td>
<td>9,707</td>
<td>9,707</td>
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<tr>
<td>Initial trainings</td>
<td>21,323</td>
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<tr>
<td>Divisional trainings</td>
<td>640,523</td>
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<tr>
<td>Cluster level trainings</td>
<td>367,267</td>
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<td>367,267</td>
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<tr>
<td>M&amp;E</td>
<td>9,600</td>
<td>9,600</td>
<td>9,600</td>
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<tr>
<td>Science camps and competitions</td>
<td>293,810</td>
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<td>293,810</td>
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<tr>
<td>Total</td>
<td>1,342,238</td>
<td>1,320,915</td>
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Thank you

Merci