MS4SSA
2017
Worcester MA, USA

An initiative to improve mathematics and science for Sub-Saharan Africa

Zanzibar: Improving Mathematics and Science in Schools

Action Plan

Report Back from the MS4SSA Conference and Workshop

May 15 - 26, 2017

Worcester, Massachusetts, U.S.A

1. Abdu S Mohamed
2. Hussein I Ramadhan
3. Mohamed A Mbarouk

Pemba
Unguja
INDIAN
OCEAN
Zanzibar
Tanzania

40°
5°
Tanga
Korogwe
Wete
Pemba
Mkoani
TANZANIA
Mkokotoni
Zanzibar
Zanzibar
Kdani
Wami
Bagamoyo
Kibaha
Dar es Salaam
Morogoro
Mafia
Island
Rufiji
Kilindoni
INDIAN
OCEAN

Mathematics and Science Learning Outcomes: A Snapshot

- Accessibility and Reasonable completion rates:
  - **295 primary schools** **226 secondary schools** **Most of children have access.**
  - Primary 84%
  - Junior secondary 91%
  - Senior secondary 98%
- Very low learning outcomes:
  - Std 6 students: >70 % below beginning numeracy level (SACMEQ).
  - Secondary average score on National final exams in 2016
    - 25% for Science
    - 16% for Maths
  - Learning gaps go mostly undetected.
- Students face many challenges:
  - high stakes examinations
  - absence of support if they struggle or fall behind
  - low economic prospects despite many years in the system
- Teacher motivation and accountability need significant improvement

ZANZIBAR STUDENTS ON THE MOVE

ZANZIBAR SCHOOLS PROJECT

Zanzibar Improving Student Prospects (ZISP) Project

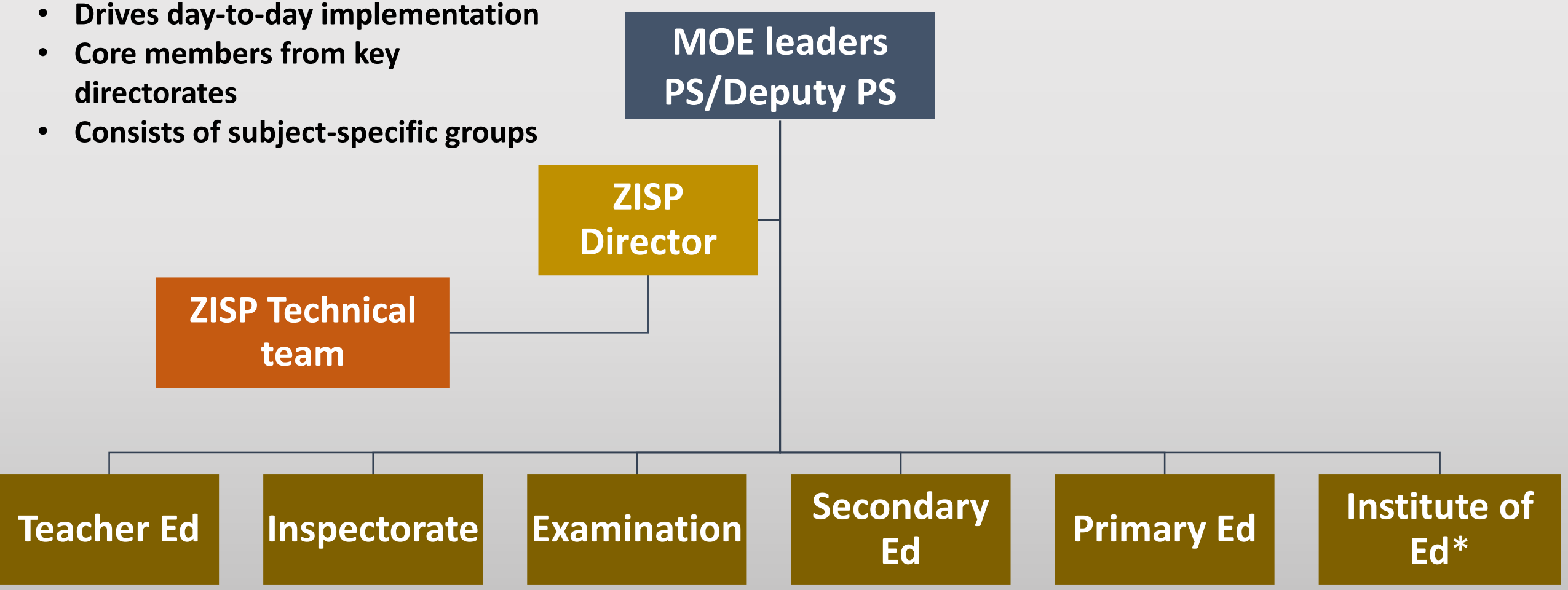
Key elements of ZISP:

- Enhancing **teacher competence** (knowledge, skills and classroom effectiveness:
  - Retraining 600 teachers with Arts background to teach M&S
  - Upgrading 1,500 current M&S teachers
  - Revamping pre-service teacher training program (not covered by project plan now)
- Providing **materials and facilities** for effective teaching and learning
- Improving **support infrastructure** (e.g., multi-purpose labs and centres)
- Strengthening **inspection and advisory** support of teachers
- Reforming the system for collecting and analyzing **examination data** (Std. 6, Form 2)
- Project **Monitoring and Evaluation**: results tracking

Coordination Structure for ZISP Implementation

Technical team:

- **Drives day-to-day implementation**
- **Core members from key directorates**
- **Consists of subject-specific groups**



*Curriculum development

Advocacy for Successful Implementation of ZISP

- **Why is it needed?**
  - Multiple MOE Departments and institutions involved
  - Motivate all involved: understanding big picture and implementation plans
  - Critical to collaborate across silos to achieve good results for Zanzibar

- **What will be done?**
  - **One-day Vision Forum** (week of July 3, 2017)
    - **For Zanzibar's leaders** in education and important guests
      - Director-level officials, heads of institutions (e.g., SUZA) + PS of MOE, and high level guests.
    - **Press conference**

  - **Continuous communication** (need plan)
    - Follow-up workshops (to be determined, mainly for teachers)
    - Outreach to the public (e.g., website, radio, flyers, brochures, SUZA TV)

One-Day Vision Forum (week of July 3)

- Implementation leader and team
- Participants
- Agenda
- Date and Venue
- Budget
- Communication

Enhancing Teacher Competence

Retraining

- 600 Arts teachers in lower secondary schools.
- Retrain to teach M&S via 2-years in-service program.

Upgrading

- 6,000 M&S teachers in Std. 5 and Form 2.
- Upgrade knowledge and skills

Pre-service

- To be designed
- Led by State University of Zanzibar (SUZA)

Expectations of the In-Service Training Program

Retraining of Arts teachers

- Focus: subject matter knowledge and pedagogy
- Teachers earn Diploma after passing examination

Upgrading of existing M&S teachers

- Focus: improve pedagogy and ability to provide remediation to lagging students
- Improve English language proficiency

Action Plan: In-Service Teacher Training *

Create MS4SSA Model

July-December 2017

- International/local consultants
- Definition of program content
- Coaching and supervision via 12 TCs
- M & E (teachers and students)

*** Includes English teachers in upper primary**

Timeline for Roll-out

Phase 1: 2018 - 2019

- Train the trainers (180)
- Equip Teacher Centres (TCs)
- Train the teachers (from 150 schools)
- Equip the schools (materials and devices)

Stimulating Student Interest in STEM

- **Project-Based Learning in Zanzibar**

- **Possible idea to explore**
  - State University of Zanzibar and Karume Institute of Science and Technology
  - Faculty to reach out to high schools
    - Build on STEM clubs in schools
    - Use WPI resources to introduce Materials Science and Robotics education.

  - ZISP funding
    - Already provides grants to schools
    - Could offer competitive grants to SUZA and KIST faculty

Zanzibar MS4SSA Action Plan: Summary and budget

- **Improve Teacher Competence, including M&E**
- **Advocacy and communication strategy**
- **Stimulating student interest in STEM**
- **All activities are expected to cost US $1075753**

Ahsante Sana kwa kutusikiliza