ザンビア共和国
授業実践能力強化プロジェクト
中間レビュー調査報告書

平成26年11月
（2014 年）

独立行政法人国際協力機構
人間開発部

人 間
ＪＲ
14-120

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目　　次

略　語　表

略語	英語名	日本語
C/P	Counterpart	カウンターパート
CPD	Continuing Professional Development	（教員の）継続的な職能開発
DEST	District Education Support Team	郡教育支援チーム
DRCC	District Resource Center Coordinator	郡リソースセンター･コーディネーター
JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
KK	Kyozai-Kenkyu	教材研究
MESTVEE	Ministry of Education, Science, Vocational Training and Early Education	ザンビア教育・科学・職業訓練・早期教育省
M/M	Minutes of Meeting	ミニッツ（協議議事録）
NEST	National Education Support Team	国家教育支援チーム
NIF	National Implementation Framework	（教育セクター）国家開発計画
NSC	National Science Center	国立科学センター
ODA	Official Development Assistance	政府開発援助
PDM	Project Design Matrix	プロジェクト･デザイン･マトリックス
PEST	Provincial Education Support Team	州教育支援チーム
PO	Plan of Operations	活動計画表
PRCC	Provincial Resource Center Coordinator	州リソースセンター･コーディネーター
R/D	Record of Discussions	討議議事録
SBCPD	School-Based Continuing Professional Development	学校ベースの（教員の）継続的職能開発
SIC	School In-service Coordinator	校内研修コーディネーター
SMASE-WECSA	Strengthening of Mathematics and Science Education in Western, Eastern, Central and Southern Africa	アフリカ理数科教育強化ネットワーク
SMASTE	Strengthening of Mathematics, Science and Technology Education	数学・理科・技術教育強化
SPRINT	School Program of In-service for the Term	校内研修プログラム
WS	Workshop	ワークショップ（研修）
ZEST	Zone Education Support Team	ゾーン教育支援チーム

ZIC	Zone In-service Coordinator	ゾーン研修コーディネーター
ZMK	Zambian kwacha	ザンビア・クワチャ（通貨単位）

評価調査結果要約表

１．案件の概要		
国名：ザンビア共和国		案件名：授業実践能力強化プロジェクト
分野：教育		援助形態：技術協力
所轄部署：人間開発部		協力金額（評価時点）：約 2.5 億円
協力期間	R/D：2011 年 11 月～2015 年 12 月（4 年 2 カ月間）	先方協力機関：教育省教師教育局、対象州・郡教育事務所
		日本側協力機関：広島大学
		他の関連協力：特になし

１－１　協力の背景と概要

ザンビア共和国（以下、「ザンビア」と記す）政府は、1996 年に教育政策「Educating Our Future」を発表し、教育の地方分権化、アクセスの平準化、教育の質の向上に取り組んできた。なかでも、教師の職能開発に注力し、2000 年から校内研修プログラム（School Program of In-service for the Term: SPRINT）を実施している。これらの取り組みにより、初等教育純就学率が 95%（2008 年）となるなど教育の量的側面は飛躍的に改善された。しかしながら、教育の質的側面では教員採用・配置の不均衡や、教材、教室数の不足などの問題を抱えており、修了率は 7 年生で 69%、９年生で 52.7%と依然として低い。生徒の学習達成度も低く、東部・南部アフリカ諸国を対象とした学力調査（小学校 6 年生の算数、読解力；2007 年）では最下位グループである。

JICA は、2005 年より 2 年間、中央州の８～12 年生の理科教員を対象として「SMASTE 理科研究授業支援プロジェクト」（フェーズ１）を実施、2008 年 2 月から 3 年間、中央州全教員、コッパーベルト州、北西部州の８～12 年生の理科教員を対象として「SMASTE 授業研究支援プロジェクトフェーズ２」を実施した。これらの協力を通じて、既存の教員研修制度である SPRINT の具体的な活動として、授業研究の 3 州への導入及び普及モデルの構築、授業研究実施ガイドラインや教授技術スキルブックなどの開発、授業研究を主導できる人材の育成等の成果を上げた。さらに 2011 年 11 月から 4 年間、「授業実践能力強化プロジェクト」を開始し、全国 10 州で授業研究を導入し、中核人材の育成や校内研修資料の改訂に取り組んでいる。

１－２　協力内容

（１）上位目標：

理数科授業での生徒の学習方法が改善する。

（２）プロジェクト目標：

教員の授業実践能力が校内研修を通じ強化される。

（３）成果：

１．校内研修制度が授業研究を通じ強化される。
２．校内研修実施のために必要な中核人材が育成される。
３．校内研修のために必要な参考資料が開発される。

（４）投入

＜日本側＞

長期専門家　　4 名
短期専門家　　2 名

研修員受入
日本　56 名
ケニア　7 名
マレーシア　72 名
供与機材　1,968 千 ZMK
ローカルコスト負担　1,967 千 ZMK
総額 2.5 億円（2014 年 2 月現在）

＜ザンビア側＞
カウンターパート（C/P）配置　中央レベル　延べ 31 名、州レベル　40 名
専門家執務室、授業研究・会議等プロジェクト活動に使用する建物
オフィス機器、車両、燃料、教材、教具
ローカルコスト負担　34,418 千 ZMK（2013 年 12 月現在概算）

２．評価調査団の概要

	担当分野	氏名	所属
調査者	団長／総括	又地　淳	JICA 国際協力専門員（教育）
	協力企画	澁谷　和朗	JICA 人開発部　基礎教育グループ　基礎教育第二課兼　第一課　主任調査役
	評価分析	宮川　眞木	合同会社ミヤカワ　代表社員
調査期間	2014 年 2 月 22 日～2014 年 3 月 16 日		評価種類：中間レビュー評価

３．評価結果の概要

３－１　実績の確認

（１）成果達成の実績

１）成果１

・授業研究を実施中の学校は 2014 年 1 月現在、全国で 2,147 校にのぼり、実施率では対象学校数 3,510 校の 61%となり、目標値の 70%に近づいている。しかし、本プロジェクト以前の SMASTE フェーズⅡプロジェクトの期間中から８～12 学年で授業研究を実施してきた先行 3 州（中央州、コッパーベルト州、北西部州）（平均 86.5%）に比べると、新規実施の 7 州での実施率は平均 37%と低く、目標値に達した州はまだない。これら新規州の普及のペースは、第２フェーズに比べると遅いものとなっている。2011 年以降、ザンビアの学校では、１～９学年を基礎教育学校とし、10～12 学年を高校とする編成から、１～７年を小学校とし、８～12 年生を中等学校とする方向で再編成中である。このため、以前は基礎教育学校に含まれていたプロジェクト新規州での対象学年８～９学年が段階的に中等学校に編入されるため、授業研究の実施状況の確認に困難が伴っている。この学校再編成が完了すれば成果１の目標値到達の見込みは明確となる。

・授業研究の質の改善状況については、データ不足により、判断が困難である。しかしながら、1 回目の授業の検討後に行われる 2 回目の授業の質が改善される傾向がみられた。

２）成果２

中核人材の育成は人材育成計画（Plan for Capacity Development of Resource Persons under STEPS Project）に沿って計画どおり進行している。研修対象者は、「コアテクニカルチームと中央レベルファシリテーター」「ステークホルダー」「ファシリテーター」に分かれ、以下の表のように、日本、ケニア、マレーシアとザンビア国内で研修を受けた

（研修者の各分類の定義については本報告書本文第２章　２－３節を参照)。

研修者の分類	場所	研修者数	
		計画 (2012-2013)	実績 (2012-2013)
コアテクニカルチームと中央レベルファシリテーター	日本	20	24
ステークホルダー	日本	23	16
	ザンビア	1,600	2,749
ファシリテーター	ケニア	12	7
	日本	12	16
	マレーシア	80	72
	ザンビア	370	323
計		2,117	3,207

中核人材が海外での研修から帰国すると、州や郡レベルで、報告する機会が用意され、研修成果は、教員や他の職員に共有されている。

３）成果３

教授スキルブックは改訂され 15,000 冊の印刷が終了し、配付待ちの状態である。マネジメントスキルブックと実施ガイドラインの改訂は計画より遅れており、今後実施される予定である。教師教育ジャーナル第１巻が発行され、現在第２巻が印刷中である。

（２）プロジェクト目標の達成の見込み

授業観察と生徒へのアンケートの結果から、サンプリングした授業において教師の授業実践能力の改善が読み取られた。しかし、指標に目標値が設定されておらず、サンプル数も不十分であることから、プロジェクト目標の達成見込みを判断することは困難である（詳細は、本報告書本文第２章　２－３節を参照)。

授業観察結果からは、授業計画に関する能力については、数学・理科共に改善がみられ、授業実施に関する能力については、理科にのみ改善がみられた。

学習達成度に関する、生徒へのアンケート結果からは、ベースラインデータに比べ改善がみられた。

３－２　調査結果の要約

（１）妥当性

以下の理由により妥当性は高いと判断される。

１）ザンビア政府の政策との整合性

教育政策文書である「Educating Our Future (1996)」において、学校ベースの（教員の）継続的職能開発（SBCPD；校内研修）が教育の質向上の有効な方策ととらえられ、それに対応し第６次国家開発計画（2011～2015 年）及び第３次国家実施計画（2011～2015 年）において、理数科を中心とする教育の質の向上が優先目標に設定されている。また、教育省は、SBCPD マスタープランを作成し、SBCPD 実施への強い姿勢を示している。

２）アプローチの適切性

授業研究の手法は、ザンビア独自の教員研修の枠組みである SPRINT によく適合し、同時に、有効な研修方法として SPRINT を活性化させた。

３）ターゲットグループ選定の妥当性

８～12 学年の教員を対象としていた先行 3 州では、対象範囲を基礎教育の 1 ～12 学年に拡大し、新規 7 州では、先行プロジェクトの経験が生かせる、８～12 年の教員に絞ったことは妥当である。

（２）有効性

以下のように、有効性向上の傾向はみられるが、現段階での判断は困難である。

１）判断材料の不足

プロジェクト目標とアウトプットの達成状況をみるデータのサンプル数（プロジェクト目標である指導技能の向上をみるための教師のサンプル数は数学 29 件、理科 31 件、比較対象のベースラインデータそれぞれ 379 件と 375 件）が不十分であり（詳細は、本報告書本文第２章　２－３節を参照)、また、指標の到達目標値が設定されておらず、現時点において、プロジェクト終了時点でのプロジェクト目標の達成度の判断は困難である。また、それに基づく有効性の判断も困難である。

２）プロジェクト目標達成状況

指導案作成面では数学理科ともに向上がみられ、授業実施面では理科にのみ向上がみられた。

３）プロジェクト目標と成果との関係

成果 1 の授業研究実施のプロジェクト目標への貢献は、授業研究実施率の高い先行 3 州で大きく、実施率の低い新規 7 州ではまだ小さい。中核人材の養成は計画どおり進行し、授業研究の拡大と実施に貢献している。

（３）効率性

以下の理由により効率性は中程度と判断される。

１）SPRINT の枠組みの活用

ザンビアの教員研修制度である SPRINT の枠組みを活用することにより、人材、予算、施設、制度等の面での新たな投入を節約できた。

２）先行プロジェクトの経験の活用

先行 3 州が新規 7 州を支援する構想は、不十分な予算や非効率な執行プロセスにより十分に実現していないが、先行プロジェクトの経験は、国レベルの会議やコアチーム主導による新規州への訪問等を通し、授業研究が新規州で進展するのに貢献している。

３）その他

コアチームの過重な作業量と予算執行にかかる時間の長さが、国レベルのいくつかの活動の遅れの原因となった。

（４）インパクト

以下の理由によりインパクトはやや高いと判断される。

１）上位目標とプロジェクト目標との関係

教師の指導技術が強化されるというプロジェクト目標が達成されれば、生徒の学習が改善されるという上位目標が達成される可能性は大きいが、現時点でのプロジェクト目標の達成見込み判断が困難でもあり、上位目標達成見込み判断は時期尚早である。

２）上位目標達成以外のインパクト産出の可能性が大きい。

① 対象県や対象学年以外への授業研究の拡大が確認された。

② プロジェクトの教材研究チームのメンバーが、数学理科の小学校及び中学校カリキュラム開発と小１算数教科書の作成準備に貢献した。

③ 2013 年にアフリカ 27 カ国が参加したアフリカ理数科教育強化ネットワーク（SMASSE-WECSA）技術会合をザンビアでホストし、その他、ナミビア、ブルンジ、マラウイ、セネガルからの視察団を受け入れるなど、ザンビアの授業研究の実践がアフリカ各国と共有された。

（５）持続性

以下の理由により持続性はやや高いと判断される。

１）政策面

国家教育政策において、アクセスと公正とともに教育の質が強調され、（教員の）継続的な職能開発（CPD）の振興は質向上の重要戦略と位置づけられており、この傾向は継続すると考えられる。

２）財政面

学校レベルでの授業研究を継続するための予算は、SPRINT の枠組みの中で確保されるが、モニタリングや指導技術向上のための活動を活発にするためには、州レベルで関連予算の配分を拡大し、予算執行がタイムリーになされるなどの効率化が求められる。また、プロジェクト期間中日本側が負担していたスキルブックやガイドラインの将来の財源確保がまだ不明確である。

３）組織面

NEST Administrative Committee で教師教育局から提案されたように、コアテクニカルチームが 27 名に増員され、マネジメント、数学、理科の 3 部門に再構成されることになれば、これまでよりも、授業研究における教材研究の取り組みなど技術面での活動の強化が見込まれる。ザンビアでは、教材研究チームメンバーを含め、有能な人材が州に散在している。SPRINT の枠組みを活用し、これらの人材を必要に応じ、国レベルまたは地方レベルの活動に活用できる。

４）技術面

教材研究チームをはじめ、技術面での中核人材は、計画どおり順調に養成されている。これらの人材をいかに活用するかが今後の課題である。教授スキルブック、マネジメントスキルブック、授業研究実施ガイドラインは学校レベルでの授業研究の質を維持するうえで有用である。教師教育ジャーナルの技術面での持続性については、編集委員の技術的な能力に関して現段階では未確定な部分がある。

３－３　効果発現に貢献した要因

（１）計画内容に関すること

授業研究を主とする校内研修の充実を現職教員の職能開発強化の中心に置くザンビア

政府の教員政策と強く合致する本プロジェクトの計画づくりが、オーナーシップ、妥当性、効率性、持続性に対し、大きく貢献している。

また、教育省の SBCPD 実施の枠組みである SPRINT を本プロジェクトが活用し、既存の人材、予算、施設、制度等を十分に活用できたことにより、新たな投入を節約できた。加えて、プロジェクト開始以前から、SPRINT の中で授業研究の構成要素である授業の観察や観察後の議論が行われていたことも、授業研究が短期間に受け入れられる素地となった。

（2）実施プロセスに関すること

協働して学び合う要素が大きい授業研究プロセスの特徴が、協力や共有を徳とするザンビアの教員に好意的に受け入れられたと考えられる。

3－4　問題点及び問題を惹起した要因

（1）計画内容に関すること

ザンビア国の現職教員政策の下で、既存の枠組みの中で実施されたことが、逆に、技術協力プロジェクトとしての、期限や指標の明確化、目標の達成等への意識を弱めた面がある。

（2）実施プロセスに関すること

コアテクニカルチームは、これまで本プロジェクトの実施に重要な役割を果たしてきたが、メンバーの専門性、勤務地、能力、役割分担の偏りなどにより、効率的な動きが取れないこともあった。ただし、今後、再編成が予定されている。

3－5　結　論

本プロジェクトは全体として順調に進行している。これまで、新規 7 州での授業研究の量的拡大（実施率）に努力を集中してきたが、授業研究の質強化の活動については今後取り組むべき課題である。

本プロジェクトは既存の SPRINT の枠組みによく適合し、将来を担う中核人材を育成しているため、本プロジェクトの妥当性と持続性が高いものとなっている。さらに、教材研究チームが教育省の初等学校及び中等学校の数学と理科のカリキュラム開発及び数学第 1 学年の教科書開発に貢献したことはプロジェクトの予期しなかった正のインパクトとなった。

一方、プロジェクト目標と成果の達成度を判断するデータが不十分のため、有効性を判断することが中間レビュー時点で困難であった。よってプロジェクト目標の達成度に大きく依存する上位目標の達成の見込みも困難である。

効率性を維持し、持続性を確保するためには、これまで育成された中核人材を授業研究の質にどのように活用するかが重要となる。

3－6　提　言

（1）プロジェクト・デザイン・マトリックス（PDM）の改訂

本プロジェクトはザンビア教育省のマスタープランの一部を支援する活動群であるが、一定期間内に所期の目的を達成することを求められる技術協力プロジェクトというスキームを適用している関係上、JICA 側にとってはプロジェクト期間終了までに何を達成すべきかが明確にされる必要がある。現行の PDM においては、成果 1 の指標を除き、プロジ

ェクト目標をはじめ指標の多くについて、達成すべき数値が明確になっていない。したがって、必要な指標に関しては、達成すべき数値を確定すべきである。

また、先行 3 州と新規拡大 7 州とでは授業研究の進捗状況や質について、本プロジェクト開始時におけるベースラインにかなりの違いがみられる指標もあるため、それらについては先行 3 州と新規 7 州とを分け、別々の指標を設ける必要がある（到達点を明確にすべき指標及び達成すべき数値等の詳細については、本報告書付属資料２「ミニッツ」の Annex 17 を参照）。さらに、一部の指標に関しては、収集すべきデータが明確でないもの、ベースラインデータを収集していないものがあるので、それらについては適切なデータを決め、終了時評価までにどのようなデータを収集すべきか早急に決める必要性がある（改訂すべき指標及び改訂例については、同 Annex 17 を参照）。（注：PDM の改訂については、現職教員課との協議で数値目標の設定を含め合意しており、NEST Sub-coordinating Committee で協議されたのち、R/D 変更の手続きを踏む予定。これについては、同付属資料４を参照のこと。）

（２）質的側面に関する一層の努力の必要性

１）「良い（質の高い）授業研究」の要素の特定

本プロジェクトは、7 州に対する授業研究の新規拡大という量的な拡大をめざす活動（成果１）と、長期的な授業研究の質の向上のために必要なリソース人材の育成・強化及び参考資料の開発という質の改善をめざす活動（成果２及び成果３）とから成る。

授業研究が継続的に実施されるためには、授業研究を実施することにより参加教員が質的に向上できたという満足感を感じ続けられることが不可欠であり、そのためには、参加教員にとって毎回新たな学びがあるような授業研究であることが必要である。

したがって、参加教員にとって学びが多い授業研究となるために、授業研究がどのような要素を満たす必要があるのかを検討し、それらの要素を本報告書付属資料２「ミニッツ」の Annex 4 の授業研究プロセスのチェックリストに含め、それらの要素をモニタリングする必要がある。

そして、持続性の確保のためにも、成果１の指標に、「授業研究の質」として求められる要素を含めることを提言する。

２）「主体的学習（Subjective Learning）」の導入促進

本プロジェクトでは、学習者中心の授業を実現する手段として「主体的学習（Subjective Learning）」という概念を導入している。この概念を定義し、重要な要素を特定し、プロジェクト終了時までに達成すべき目標値を設定する必要がある。

ステークホルダー・ワークショップ（WS）やファシリテーターWS 等の既存の機会を活用し、学習者の「主体的学習」を強化する方法を早急に広めていく必要がある。その際、学習者の「主体的学習」を促進するような授業を、実際に教員が見る機会を設けることが望ましい。

３）「教材研究」の導入促進

授業研究の質を高めるための方法として、本プロジェクトでは「教材研究」の導入を図っている。「教材研究」は、効果的な授業を実施するために授業の計画段階において行われるものである。特に、授業において学習者の「主体的学習」を実現するためには、生徒の現状や教材について十分に調べるなど、授業の計画段階で十分な教材研究が行われることが不可欠である。したがって、校内授業研究の普及を図ってきたザンビアにおいて、授業研究の質を深めるために教材研究を普及・強化することは、次なるステップ

として適切である。

本フェーズでは教材研究に精通した人材を育成するために、本邦研修を活用し主要人材（「教材研究チーム」）の能力強化を図っているが、本プロジェクトの終了時までに、どの程度の能力強化が行われるべきかを明確にし、強化された能力をある程度具体的な成果として把握することが必要である。

さらに、教材研究の導入・普及のために、「教材研究チーム」がどのように質的側面に関わっていくのかを含め、教材研究の普及方法に関する方略（活動）を明確にし、プロジェクト終了時までに達成すべき成果を明確にすることを提言する。例えば、成果として、本邦研修の機会や教材を活用し、ザンビアの教員の教材研究に対する理解が促進されるような資料を開発し、教材研究に特化した小冊子を開発することを検討されたい。

4）「良い授業」及び「良い授業研究」の発掘と開発

「授業研究」や「主体的学習」など、新しい概念や新しい実践を導入するには、単に説明するだけでは十分ではなく、実践例を見せることが効果的である。したがって、報告書やモニタリングの機会を活用し、「生徒が主体的に学習しているような授業」や「教員にとって学びの多い授業研究」を発掘し、他の教員がそれらの実践例を実際に見て、体験する場を設けることが重要である。

また、そのような優良実践例を発掘するだけではなく、模範となるような授業や授業研究の実践例を積極的に開発することにも着手されたい。例えば、いくつかの学校を「モデル校」として選定し、教材研究チーム（メンバー）を集中的に関与させ、授業や授業研究に関する先駆的な事例を開発するなどが考えられるであろう。

（3）コアテクニカルチームの強化

コアテクニカルチームや教材研究チームは、授業研究の拡大、強化、改善のために極めて重要である。他方で、その重要性や能力の高さゆえ、コアテクニカルチームや教材研究メンバーが業務を抱えすぎ、それによる活動の遅れがみられた。

授業研究の質的側面の強化に対する関与を強めていくためには、コアテクニカルチームと教材研究チームを、まずは量的に強化する（人数を増やす）必要がある。そうすることにより、コアチームメンバー及び教材研究チームが、運営面、教科面それぞれの領域に特化した活動ができるようにすることが必要である。

（4）プロジェクト終了後の自立発展的仕組みづくりへの着手

本プロジェクトのこれまでの約 2 年間は、授業研究を新規 7 州に拡大することが活動の中心となっていた。後半の残り 2 年間は、プロジェクト終了後を見据え、日本人専門家チームがいなくなった後に、授業研究を維持し、その質を向上させるための方法及び体制づくりに着手する必要がある。

例えば、プロジェクト終了後の、教材研究チームの体制（どのように維持されるのか）、優良事例発掘のための報告書を活用するための仕組み、定期的にスキルブックを改訂・開発するための予算及び体制、ジャーナルを継続的に出版し続ける体制などについて検討を始めることが必要であろう。

Summary

<table>
<tr><td colspan="3">I. Outline of the Project</td></tr>
<tr><td colspan="2">Country: Republic of Zambia</td><td>Project Title: Strengthening Teachers' Performance and Skills through School Based Continuing Professional Development (STEPS)</td></tr>
<tr><td colspan="2">Issues/Sector: Education</td><td>Cooperation Scheme: Technical Cooperation</td></tr>
<tr><td colspan="2">Division in Charge: Human Development Department</td><td>Total Cost: 250 million yen</td></tr>
<tr><td>Period of Cooperation</td><td>November 2011 – December 2015 (4 years and 2 months)</td><td>Partner Country's Implementing Organization
National level: Directorate of Teacher Education and Specialized Service (TESS)
Provincial level: Education Departments of all the ten Provinces</td></tr>
<tr><td colspan="2"></td><td>Supporting Organization in Japan: Hiroshima University</td></tr>
<tr><td colspan="3">1. Background of the Project
The government of Zambia disclosed their education policy paper 'Education Our Future' in 1996. Under the policy stipulated in the above, they have tackled 'Decentralization of authority', 'Equalization of accesses' and 'Improvement of quality'. Implementation of an in-service training programme, namely the SPRINT (School Programme of In-Service for the term) is one of their successful efforts. Under the policy, achieving over 95% net enrolment rate of the primary education in 2008 for example, the education of Zambia has been remarkably improved in quantity aspect. However in quality aspect, there are still problems like imbalance of employment/deployment of teachers and insufficiencies of education materials and classrooms. As a result, the children of Zambia were ranked in the lowest performing group in an achievement survey of mathematics and reading for the sixth grade among eastern and southern countries of Africa in 2007.
JICA supported SMASTE School-based Continuing Professional Development Project Phase I (2005-2007) for Grade 8-12 science teachers in the Central Province, and Phase II (2008-2011) for all the teachers in the Central Province and Grade 8-12 science teachers in Copperbelt Province and North-west Province. These projects established the expansion model of lesson study, developed the teaching skills book and the implementation guidelines, and trained the leaders of lesson study implementation. Following the above, JICA has been supporting the project for Strengthening Teachers' Performance and Skills through School Based Continuing Professional Development for four years since November 2011. The project has introduced lesson study to all the ten provinces in the country and has tackled the training of resource persons, revision of materials for School-Based Continuing Professional Development (SBCPD) and other activities.

2. Project Overview
(1) Overall goal
Students learning process in science and mathematics is improved.

(2) Project Purpose
. Teaching skills are enhanced under School-based Continuous Professional Development.</td></tr>
</table>

(3) Outputs
1) SBCPD is strengthened through Lesson Study.
2) Capacity of resource persons for implementing SBCPD is enhanced.
3) Capacity of resource persons for implementing SBCPD is enhanced.

(4) Inputs
Japanese side: Total 250 mil. Yen, as of February, 2014

Long-term Expert	4	Equipment	1,968 thou. ZMK
Short-term Expert	2	Books	27 thou. ZMK
Trainees received		Local cost	1,967 thou. ZMK
in Japan	56		
in Kenya and Malaysia	79		

Zambian side:

Counterparts	
National level	31
Provincial level	40
Equipment	: Vehicles, Fuel, Office equipment, Educational Materials
Facilities	: Offices for Japanese experts, Buildings for lesson study and meetings
Local costs	34.4 mil. ZMK

II. Evaluation Team

Members of the Evaluation Team

Mr. Atsushi Matachi	Team Leader Senior Advisor (Education), JICA
Mr. Kazuro Shibuya	Cooperation Planning Deputy Director, Basic Education Division 2 and Basic Education division 1, Basic Education Group, Human Development Department, JICA
Mr. Shimboku Miyakawa	Evaluation and Analysis Representative, Miyakawa LLC

Period of Evaluation: 22 February 2014 – 16 March 2014	Type of Evaluation: Mid-term Review

III. Results of Evaluation

1. Project Performance

(1) Outputs
1) Output 1

The number of the schools implementing lesson study in the country reached 2,147, or 61% of 3,150 all target schools, and is approaching the target figure of 70%. However none of seven new provinces has reached the target and their paces of expansion are slower than those of the three mentor provinces in Phase I or II.

Since 2011, the school system of Zambia has been changing from the old system of basic school (Grade 1-9) and high school (G10-12) to the new one of primary school (G1-7) and secondary (G8-12).

Under this situation the implementation of lesson study in basic schools where G8 and G9 have been transferring to secondary schools is difficult. If this transformation will be completed early, the possibility of achieving the Output1 in the quantity aspect will be high.

Judging the achievement of the Output 1 in the quality aspect is difficult due to insufficiency of data.

2) Output 2

Training for the resource persons was planned in three categories. They are for 'Core Technical Team and National level Facilitators', 'Stakeholders' and 'Facilitators'. The training was planned up to the final year of the Project and has been achieved almost as planned.

Category	Place	No. of Participants	
		Plan (2012-2013)	Achievement (2012-2013)
Core Technical Team and National level Facilitator	Japan	20	24
Stakeholders	Japan	23	16
	Zambia	1600	2749
Facilitator	Kenya	12	7
	Japan	12	16
	Malaysia	80	72
	Zambia	370	323
Total		2,117	3207

There have been opportunities at the district and provincial levels where resource persons can share the outcomes of the training with other teachers and officers.

3)Output 3

Teaching Skills Book was revised to be a second edition and 15,000 copies were printed. Management skills book and Implementation guidelines have not been revised yet and are going to be revised during the project period. 'Zambia Journal of Teacher Professional Growth, Volume 1, Number 1' was published and 3,000 copies were printed. The second volume is currently under printing.

(2) Project Purpose

Because of insufficient number of data available and lack of clear target figures for the indicators, it is not possible to generalize the progress made and prospect for achieving the Project Purpose. However, some improvement of teachers' teaching skills in the sampled lessons was observed in the results of the lesson observation and the questionnaire to the students.

2. Summary of Evaluation Results.

(1) Relevance

The relevance is judged high due to the following reasons.

- Relevance to the education policy of Zambia: Education Policy document "Educating Our Future (1996)" stresses the importance of the improvement of education and clearly articulated SBCPD as one of the effective measures to be taken. Following this policy, one of the prioritized objectives of the Sixth National Development Plan (2011-2015) and the National Implementation Framework III (2011-2015) is to improve the quality of education at all levels, and more specifically, to improve

students' learning achievement in science and mathematics. Ministry of Education developed "the SBCPD Master Plan 2010-2023'. This shows the MOE's strong commitment to SBCPD.

- Appropriateness of the approach: The lesson study approach well fits and vitalizes the existing SPRINT (School Programme of In-service for the Term) framework in the SBCPD policy in Zambia and highly appropriate in the context of Zambia.
- Appropriateness of the selection of the target group: In the mentor provinces, the target was expanded to lower grades (grade 1-7), while for the other seven new provinces, only grade 8-12 teachers were targeted. This phase-in approach was proved as workable in the previous SMASTE Phase II.

(2) Effectiveness

Due to the following reasons it is difficult to judge the effectiveness of the Project although a trend of improving effectiveness is observed.

- Lack of information for judgment: Data obtained to see the achievement toward the Project Purpose and the Outputs are not sufficient. In addition clear target figures are not provided for many of the indicators.
- Progress toward the Project Purpose: Average scores of the teachers' teaching skills for lesson planning showed improvement in Mathematics and Science. Those for lesson delivery showed the improvement in Science only.
- Relation between the Project Purpose and the Outputs: Contribution of the Output 1 to the Project Purpose seems high in the mentor three provinces but insufficient in the new provinces. Training for the resource persons have been progressed as planned and contributed to expansion and implementation of lesson study.

(3) Efficiency

The efficiency is judged intermediate due to the following reasons.

- Utilization of the framework of the SPRINT: Utilizing the SPRINT's framework, the Project did not have to build new structures including personnel, budget, facilities and institutions for the Project.
- Utilization of the experience of the Phase I and II: Though the mentoring activities has not taken place as expected due to inadequate and erratic funding, the experience of the previous phases of the Project has been used for expansion to the new provinces through national level meetings and technical support visits of the National Core Team.
- Others: Overload of the National Core Team and time-consuming administrative procedure to execute the budget caused delay in some activities at the national level.

(4) Impact

The impact is judged relatively high due to the following reasons.

- Relation between the Overall Goal and the Project Purpose: Students' learning process in Students' learning process in the classroom is expected to be improved if teachers' teaching skills are enhanced and teachers continue applying the skills. However, the achievement of the Overall Goal heavily depends on the progress of the Project Purpose. As the degree of the achievement of the Project Purpose cannot be assessed at this stage, it is too early to judge the prospect of the overall goal.
- Unintended impacts
  - Lesson study is expanding beyond the target districts and target grades of the Project.

- KK Team members contributed to curriculum development of science and mathematics and textbooks development in mathematics (Grade1).
- Zambia received study visits on lesson study from Namibia, Burundi, Malawi and Senegal. The experience of lesson study was shared with educators of those countries.

(5) Sustainability

The sustainability is judged relatively high due to the following reasons.

- Policy aspect: Quality, as well as access and equity, has been emphasized in the national policy and the promotion of CPD has been regarded as a key strategy. This trend will continue as no needs for change is considered.
- Finance aspect: The budget for continuing lesson study is likely to be secured within the framework of SPRINT. However to enhance the monitoring and other activities for improving teaching skills, larger budget distribution to CPD and prompt release of the fund are needed. It is not clear whether some of the budget borne by the Japanese side such as costs for printing Management and Teaching Skills Books will be secured at this stage.
- Organization aspect: When the National Core Technical Team will be reinforced with three groups and 27 members in total as proposed at the NEST administrative committee meeting, more activities in the technical fields such as Kyozai-Kenkyu for lesson study will be expected. In Zambia, competent resource persons are available in the provinces. Under the framework of the SPRINT, even after the Project period, the Zambian side will be able to utilize those competent resource persons for activities both at the province levels and national levels.
- Technical aspect: A sufficient number of resource persons in the aspect of technical matters have been trained. It is critical how these resource persons will be utilized during and beyond the Project period. It is too early to judge this matter at this moment. The plan regarding how the journal (ZJTPG) will be maintained in terms of technical aspects, including technical capacity of editors, is not clear at this stage.

3. Factors that promoted realization of effects

(1) Factors concerning the planning

Promotion of SBCPD is a core strategy of teacher training policy in Zambia. The project planning that matches the policy has contributed to the ownership of the Zambian side as well as the relevance, the efficiency, and the sustainability of the Project. The Project utilizes the existing framework of SPRINT, which enables it to use resources that are allocated to SPRINT including personnel, budget, facilities, and institutions for the Project. In addition, major components of lesson study, e.g., school based training, teacher group meeting, lesson demonstration and observation, discussion, reporting and recording, had been also conducted even before lesson study was introduced, which made it easier for lesson study to be accepted.

(2) Factors concerning the implementation process

Lesson study which demands collaborative learning among teachers seems to be well suited to the Zambian national trait and culture where teachers are willing to share their experience and knowledge with other colleagues.

4. Factors that inhibited realization of effects

(1) Factors concerning the planning

The project implementation within the existing framework of the government might have weaken sense of responsibilities for the achievement level to be indicated by the indicators in the PDM and time limit for activities to a certain extent because it is not so seriously demanded in usual government work.

(2) Factors concerning the implementation process

The insufficient number of personnel for the Core Technical Team seems to be a part of the causes for delays in some activities. The composition of the members of the Core Technical Team, namely, bringing together the members from various Provinces, has made it difficult for the Team to make prompt decisions. In order to address this issue, re-structuring the Core Team members according to specialization has been discussed.

5. Conclusion

As a whole, the Project has made good progress so far, while the Project had to spend most of time for expanding lesson study in seven new provinces. This caused the delay in Project activities for enhancing the quality of lesson study.

This Project is considered to have high relevance and sustainability. This project fits well and vitalizes the existing SPRINT framework in the SBCPD policy in Zambia. In addition, this Project has enhanced the capacity of resource persons at the national, provincial, district and school levels through the training in Japan, Malaysia and Kenya. Those resource persons have shared their experience through facilitators' workshops in the Project. It contributes to the sustainability of the Project as such resource persons are available not only at the national level but also at the provincial and district level in order to help lesson study in schools.

In addition, unintended positive impacts have been observed through the Project activities. KK Team members were asked to contribute to curriculum development of science and mathematics and textbooks development in mathematics (Grade1), which can be considered as spill-over effect of the Project.

Although there are some positive trends observed, it is difficult to judge the effectiveness of the Project because data obtained to see the achievement toward the Project Purpose and the Outputs are not sufficient. The achievement of the Overall Goal heavily depends on the progress of the Project Purpose. As the degree of the achievement of the Project Purpose cannot be assessed at this stage, it is too early to judge the prospect of the overall goal.

To sustain the efficiency and ensure the sustainability of the Project, it is critical how trained resource persons can contribute to the quality aspect of lesson study.

6. Recommendation

(1) Revision of Project Design Matrix (PDM)

The Mid-Term Review Team is aware that the STEPS Project supports parts of MESVTEE's SBCPD Master Plan. Nevertheless, as this Project is a technical cooperation project that is supposed to achieve a specific project purpose within a designated timeframe, it is necessary for JICA to have time-bound objectives that must be achieved by the end of the Project period.

The current PDM, however, does not specify target figures for the objectively verifiable indicators

including those for the Project purpose. Therefore, the Project should set target figures where necessary.

As the progress in expanding lesson study and its quality were different in the three mentor provinces and in the seven new provinces, the Team recommends that the target figures for the three mentor provinces and those for the seven new provinces be different (Refer to the ANNEX17 for the details of suggested modification of indicators and target figures).

(2) Further efforts in improving the quality aspects

1) Identifying elements/aspects of “good (quality)” lesson study

This Project consists of activities for expanding coverage of lesson study activities to the new seven provinces (Output 1) and those for improving the quality of lesson study such as developing the capacity of core personnel and developing reference materials (Output 2 and Output 3).

In order for lesson study to be continued, the quality of lesson study is critical. Lesson study must provide participating teachers with opportunities to learn something new each time for improving their lesson delivery.

Hence, the Team suggests that the Project identify elements/aspects of “good (quality)” lesson study. Then, the elements/aspects should be included in the checklist for lesson study procedure and be monitored.

2) Facilitating the introduction of Subjective Learning

This Project has introduced the concept of “Subjective Learning” as a means to realize a learner-centred lesson. It is necessary to define the concept, identify critical elements of subjective learning, and set the targets to be achieved by the end of the Project.

Methods which enhance subjective learning need to be introduced as soon as possible by utilizing existing opportunities such as Stakeholders’ Workshops and Facilitators’ Workshops. It is recommended to show actual lessons that facilitate subjective learning since showing actual examples is more effective than just explaining.

3) Introduction of the concept of “Kyozai-Kenkyu”

The Project has introduced the concept of “Kyozai-Kenkyu” which is considered as a critical step for lesson planning. In order to foster subjective learning for learners, teachers must prepare a lesson by studying learners and learning materials carefully and meticulously. Therefore, introducing practices based on “Kyozai-Kenkyu” is an appropriate approach to improving the quality of Lesson Study.

This Project is investing a lot in developing the capacity of core personnel, namely, “Kyozai-Kenkyu Team (KK Team)”members and some Facilitators by providing them with opportunities to be trained in Japan and Malaysia. It is very critical to develop a strategy and a concrete plan as to how those developed capacities will be utilized to introduce and entrench “Kyozai-Kenkyu” practices in Zambia.

For instance, it is suggested that a booklet on “Kyozai-Kenkyu” be developed by utilizing what those core personnel (will) have learned in Japan and Malaysia so that the booklet can facilitate introducing the concept of “Kyozai-Kenkyu”.

4) Identifying and developing good practices on lessons and lesson study

It is not easy to introduce new practices or new concepts such as lesson study and subjective learning just by explanation. As stated in 2. (2) above, it is more effective to show teachers actual examples.

Hence, it is important to identify good examples of lessons and lesson study so that teachers can learn by visiting those actual examples/practices.

It is also important, not only to identify good practices on the ground, but also to develop good examples/practices by involving KK Teams actively and intensively. For example, it will be effective to develop some schools as “model schools” which can be “showcases” for teachers to see actual examples of “a good lesson” which fosters subjective learning as well as “a good lesson study” where participating teachers can learn a lot.

It is also suggested that the Journal (ZJTPG) collect not only academic papers but more papers on good practices so that practitioners including teachers on the ground can present their experience on the ground.

(3) Strengthening the Core Technical Team

The Core Technical Team and the Kyozai-Kenkyu Teams are critical to expanding, entrenching and improving lesson study. As some of those core personnel shoulder too much tasks, some delays have been observed in the implementation of project activities.

The Team suggests that, considering the importance of the Teams, the Core Technical Team and KK Teams be strengthened in order to allow them to focus on their specialty, namely, management, mathematics and science.

(4) Establishing a sustainable structure for the future

The Project has struggled with the expansion of lesson study to the seven new provinces in the first two years of the Project. It is high time to start thinking about the strategy as to how to entrench lesson study activities and how to continue improving the quality. For example, strategies need to be developed as to how KK Teams will be maintained, how the Management and Teaching Skills Book will be revised and improved, how the Journal will continue to be published, etc. after the end of the Project.

In addition, the importance of the education quality agenda is clearly stated in the Revised SNDP and NIFIII. Given the already demonstrated positive impact of SBCPD on quality, the NEST Administrative Committee strongly recommends that MESTVEE, through the Directorate of Planning & Information, prioritizes budgetary allocations to SBCPD through Lesson Study activities at Provincial, District, and School levels.

第１章　中間レビュー調査の概要

１－１　背景（プロジェクトの概要含む）

ザンビア共和国（以下、「ザンビア」と記す）政府は、1996 年に教育政策「Educating Our Future」を発表し、教育の地方分権化、アクセスの平準化、教育の質の向上に取り組んできた。なかでも、教師の職能開発に注力し、2000 年から校内研修プログラム（School Program of In-service for the Term：SPRINT）を実施している。これらの取り組みにより、初等教育純就学率が 95％（2008 年）となるなど教育の量的側面は飛躍的に改善された。しかしながら、教育の質的側面では教員採用・配置の不均衡や教材、教室数の不足などの問題を抱えており、修了率は７年生で 69％、９年生で 52.7％と依然として低い。生徒の学習達成度も低く、東部・南部アフリカ諸国を対象とした学力調査（小学校６年生の算数、読解力；2007 年）では最下位グループである。

JICA は、2005 年より 2 年間、中央州の８～12 年生の理科教員を対象として「SMASTE 理科研究授業支援プロジェクト」（フェーズ１）を実施、2008 年 2 月から 3 年間、中央州全教員、コッパーベルト州、北西部州の８～12 年生の理科教員を対象として「SMASTE 授業研究支援プロジェクトフェーズ２」を実施した。これらの協力を通じて、既存の教員研修制度である SPRINT の具体的な活動として授業研究の 3 州への導入及び普及モデルの構築、授業研究実施ガイドラインや教授技術スキルブックなどの開発、授業研究を主導できる人材の育成等の成果を上げた。さらに 2011 年 11 月から 4 年間、「授業実践能力強化プロジェクト」を開始し、全国 10 州で授業研究を導入し、中核人材の育成や校内研修資料の改訂に取り組んでいる。プロジェクトの概要は以下のとおり〔詳細は巻末の付属資料２「ミニッツ」に添付のプロジェクト・デザイン・マトリックス（PDM）を参照〕。

（１）プロジェクトの概要

１）スーパーゴール：
<u>理数科授業での生徒の学習方法が改善する。</u>

２）上位目標：
<u>理数科授業での生徒の学習方法が改善する。</u>

３）プロジェクト目標：
<u>教員の授業実践能力が校内研修を通じ強化される。</u>

４）成果：

１．校内研修制度が授業研究を通じ強化される。

２．校内研修実施のために必要な中核人材が育成される。

３．校内研修のために必要な参考資料が開発される。

１－２　調査の目的・方針

本調査は、プロジェクト開始から約 2 年が経過したことを踏まえ、これまでの活動の進捗とプロジェクトの達成状況を評価し、ザンビア側と共有することを目的として派遣された。調査方針は以下のとおり。

① PDM 及び活動計画表（PO）に基づき、プロジェクト活動の進捗状況を確認し、評価５項目の観点からの評価を行う。

② プロジェクト活動の進捗とプロジェクト実施における課題（授業研究の質の確保、コアテクニカルチームの再編成）及びプロジェクト残り期間で達成すべき目標設定（プロジェクト目標・成果）について、日本側・ザンビア側との共通理解を形成する。

③ 日本側、ザンビア側双方で同意した事項をミニッツ（M/M；付属資料２参照）として取りまとめ、署名交換をする。

１－３ 調査団の構成

担当業務	氏名	所属
団長／総括	又地 淳	JICA 国際協力専門員（教育）
協力企画	澁谷 和朗	JICA 人間開発部 基礎教育グループ 基礎教育第二課兼第一課 主任調査役
評価分析	宮川 眞木	合同会社ミヤカワ 代表社員

１－４ 調査日程

付属資料１のとおり。

第２章　評価の方法

２－１　評価実施体制

調査実施にあたっては、調査団が、関連報告書及び他の文献資料及びインタビュー、現場視察等から情報を収集整理したものを基に評価案を作成し、教育省現職教員課職員、専門家らと事実関係の確認を行った。評価案は、国家教育支援チーム（National Education Support Team：NEST）Administrative Committee 会合で議論され、ミニッツ（M/M；付属資料２参照）として取りまとめられた後、調査団長及び教育省計画情報局長により M/M が署名された。

２－２　評価実施方法

評価グリッドに基づいて以下の情報・データを収集し、プロジェクトの実績と実施プロセスを確認し、それに基づき、５項目の評価分析を行った。

（１）文献及び既存資料調査

レビューした主な資料は以下のとおり。

１）政策文書等

・教育政策（Educating Our Future）
・第６次国家開発計画（2011～2015 年）
・教育セクター実施計画Ⅲ（2011～2015 年）
・学校ベースの（教員の）継続的職能開発（School-Based Continuing Professional Development：SBCPD）マスタープラン（2010～2023 年）

２）プロジェクト情報

・プロジェクト・デザイン・マトリックス（PDM）、活動計画表（PO）
・事業進捗報告書（第１回～第４回）
・プロジェクト実施協議報告書（2011 年 11 月）
・中井専門家中間業務報告書（2013 年 11 月）
・山田専門家業務完了報告書（2012 年 11 月）
・Project Booklet（November 2011）
・Zambia Journal of Teacher Professional Growth Volume 1, Number 1 (June 2013)
・Baseline Survey Report on STEPS Project (October 2012)
・教育省予算書　2014

（２）直接観察

コッパーベルト州ンドラ市とルサカ州ルサカ市でそれぞれ、８学年の数学、11 学年の化学の授業とそれに続く協議を見学した。また中央州ムンブワの小中併設の学校で授業観察と教員へのインタビューを行った。

（３）インタビュー

教員、校長、ゾーン教育支援チーム（Zone Education Support Team：ZEST）メンバー、郡

教育支援チーム（District Education Support Team：DEST）メンバー、州教育支援チーム（Provincial Education Support Team：PEST）メンバー、テクニカルコアチームメンバー、教材研究チームメンバー、日本人専門家らに対し、インタビューを行った。

（4）実績と実施プロセスの確認の視点

項目	視点
実績の検証	投入は計画どおり実施されたか 成果は計画どおり達成されるか プロジェクト目標は達成されるか 上位目標の達成の見込みはあるか
実施プロセスの検証	活動は計画どおりに実施されたか 技術移転の方法に問題はないか プロジェクトマネジメント体制 実施機関やカウンターパート（C/P）のプロジェクトに対する認識は高いか 実施過程で生じている問題や、効果発現に影響を与えた要因は何か

（5）評価５項目

項目	視点
妥当性	評価時点においても、プロジェクト目標、上位目標が妥当であるかどうかを、ザンビア政府の政策、日本の援助政策との整合性の観点から検討する。
有効性	プロジェクトのアウトプットの達成の度合い、及びアウトプットがプロジェクト目標の達成度にどの程度結びついているのかを検討する。
効率性	プロジェクトの投入から生み出される成果の程度は、タイミング、質、量の観点から妥当であったかをどうかを分析する。
インパクト	プロジェクトが実施されたことにより生じる波及効果の正・負の効果を、当初予定しなかった効果も含め検討する。
持続性	協力終了後、プロジェクトによってもたらされた成果や効果が持続されるか、あるいは拡大されていく可能性があるかどうかを予想するために、制度的（政策的）側面、財政的側面、技術的側面、技術的側面からプロジェクトの持続性の見込みを考察する。

２－３　評価調査の制約・限界

本調査は、以下の制約と限界の下に実施された。

（1）PDM 指標データの不足

PDM には、上位目標とプロジェクト目標の達成の判断材料となるデータを、ベースライン調査とエンドライン調査で入手することが記されており、比較の基準となるベースラインデ

ータは、全 10 州の教員 758 名、生徒 7,580 名を対象に、2012 年 6 月にデータが収集され報告書が出来上がっている。指標達成の判断材料となるデータは、今後の終了時評価の際にベースライン調査と同規模の調査により収集されることになるが、今回の中間評価では、もともとベースライン調査時と比較可能なサンプル規模を収集する計画がなく、限られた時間で 10 ディストリクト、教員 60 名、生徒 129 名の小規模のサンプルを集め、各州の傾向を見ることを目的とせざるを得ないという制約の下で行われた。このことにより、中間レビュー時に収集したデータをベースライン調査と比較して一般化して達成状況を判断することが困難であった。

また、一部の PDM 指標に関して、プロジェクトではなく、評価分析コンサルタントを中心に中間レビュー調査団が収集・評価するという認識のずれがあり、進捗状況を評価するに十分なサンプル数を集めることができなかった。具体的には、プロジェクト目標の指標 ii（教員による教授の自己評価）、成果２の指標 ii （中核人材による自身の業務（授業研究に対する技術支援）に対する自己評価、指標 iii （中核人材の支援に対する教員の自己評価）、成果３の指標 ii 〔資料の利用者（教員等）による評価〕である。これらの指標については、評価時点でデータ収集がなされていなかったため量的データから一般化することはできなかったが、関係者へのインタビュー調査で確認することとした。

また中核人材（Resource persons）の定義についても明確でなく、それがこれらの指標のデータ不備の一因となったと考えられる。中核人材には、スキルマネジメントブックの改訂等にあたる教材研究チームのメンバーもいれば、ステークホルダーズ・ワークショップ[1]やファシリテーターズ・ワークショップ[2]を企画・運営する州や郡レベルでの人材もいる。また各学校にいる授業研究ファシリテーターも一般教員にとってのリソースパースンと想定され得る。中核人材の定義を明確にし、誰による誰に対する評価をどのツールで行うのか決めておくことが今後の課題である。

（２）日程と移動可能距離の制約

授業研究の全国展開の進展の程度を確認することは重要調査事項であり、特に新規州への訪問は重要であるが、日程の都合上、離れた位置にある州への訪問は避け、近隣の州へのみ視察の州視察となった。新規州への訪問は、ルサカ州 1 州となった。これが、地方の州の状況に関する情報の直接入手への制約となった。

[1] 授業研究実施ガイドラインによれば、授業研究ファシリテーター、学科長（Heads of Department）、シニア教員、校長、副校長、郡教育支援チーム（DEST）、ゾーン教育支援チーム（ZEST）を参加者として想定。ワークショップのリソースパースンは、基本的には州教育支援チーム（PEST）が、先行州の場合には DEST が務める。

[2] 同じく上記ガイドラインによれば､授業研究ファシリテーターを務める教員〔一般教員や､校内研修コーディネーター（School In-service Coordinator : SIC）と呼ばれる教員。ゾーン制度を採用している地域では学校教員であり、かつ、ゾーン研修コーディネーター（Zone In-service Coordinator : ZIC）として他校の授業研究ファシリテーターを務める場合がある〕、校長、学科長、シニア教員、郡リソースセンター・コーディネーター（District Resource Center Coordinator : DRCC）を参加者として想定。ファシリテーターの定義については、実施協議調査報告書に添付された討議議事録（R/D）の Annex IV-6 に記載あり。ワークショップのリソースパースンは PEST ないし DEST が務める。

第３章　調査結果概要

以下の調査結果をカウンターパート（C/P）機関である教育省現職教員研修課及び国家教育支援チーム（NEST）Administrative Committee で協議し、その結果をミニッツ（M/M）に取りまとめてザンビア側と署名を交わした（巻末付属資料１参照）。

３－１　投入実績

日本側、ザンビア側双方とも、投入はほぼ計画どおり実施され、成果の発現に貢献している。

（１）ザンビア側投入実績

プロジェクト・デザイン・マトリックス（PDM）に記されているザンビア側の投入要素は以下のとおりである。

１）人的資源

ⅰ：国家教育支援チーム（NEST）、ナショナルコアテクニカルチーム、10 州の州教育支援チーム（PEST）と郡教育支援チーム（DEST）のメンバー

ⅱ：大学／カレッジ講師

ⅲ：NSC 職員

ⅳ：SMASTE プロジェクトフェーズⅠとⅡで育成されたファシリテーターとステークホルダー

２）施設・機材・物品

ⅰ：オフィス及びプロジェクト活動に使用する建物

ⅱ：オフィス機器

ⅲ：車両と燃料

ⅳ：授業研究のための教材・教具

３）経費負担

ⅰ：授業研究活動実施に係る経費（ステークホルダーズ・ワークショップとファシリテーターズ・ワークショップ開催経費を含む）

ⅱ：プロジェクト活動に関する、ザンビア人の出張手当て

表３－１にこれまでのザンビア側の投入実績を示す（詳細は、巻末の付属資料２「ミニッツ」の Annex 7, 8, 9 参照）。学校での授業研究の実施と、関連するモニタリングや会議を含めた経費は、すべてザンビア側が負担している。

表３－１　ザンビア側投入実績

<table>
<tr><th>投入要素</th><th>実績</th></tr>
<tr><td>C/P</td><td>中央レベルにおいて、これまでに、以下のように交代を含め 31 名が配置され、退職・異動を踏まえると現在の配置数は 25 名である（付属資料２「ミニッツ」の Annex 7 参照）。コアテクニカルチームと教材研究チーム[3]には、SMASTE フェーズⅠ、Ⅱで能力強化を受けた州所属の関係者が多数含まれている。
カウンターパート一覧
<table>
<tr><th>役職</th><th>人数</th></tr>
<tr><td>プロジェクトマネージャー</td><td>3</td></tr>
<tr><td>プロジェクトコーディネーター</td><td>2</td></tr>
<tr><td>プロジェクトアドミニストレーター</td><td>2</td></tr>
<tr><td>教師教育局現職教員担当</td><td>3*</td></tr>
<tr><td>教師教育局教員養成担当</td><td>3</td></tr>
<tr><td>コアテクニカルチームメンバー</td><td>12*</td></tr>
<tr><td>教材研究（数学）チームメンバー</td><td>6*</td></tr>
<tr><td>教材教育（理科）チームメンバー</td><td>6*</td></tr>
<tr><td>プロジェクト事務局担当</td><td>1</td></tr>
<tr><td>計</td><td>31</td></tr>
</table>
*：プロジェクトの他の役職と兼任あり。

さらに、州レベルでも、各州で、プロジェクトマネージャー1 名、プロジェクトコーディネーター2 名、プロジェクトアドミニストレーター1 名、計 4 名が配置されている。</td></tr>
<tr><td>施設・機材・物品</td><td>中央レベルから、末端の学校まで、既存の施設が計画どおり活用されている（付属資料２「ミニッツ」の Annex 9 参照）。
通常授業や授業研究で使用する機材・物品は、必要に応じ、州、郡、ゾーン各レベルの教育リソースセンターから、学校に貸与される仕組みがある。</td></tr>
</table>

[3] コアテクニカルチームはプロジェクトの技術的な知見を生み出す中核チームとして R/D の Annex IV-3 に定義され、教育省 In-service Unit の課長を議長として結成された。しかし、より理数科の教材研究に特化した作業を行うため教材研究チーム（現地では“Kyozai-Kenkyu”頭文字を取って“KK Team”と呼称されることも多い）が作成された。チームメンバーは今回調査時の「ミニッツ」（付属資料２）の Annex 7 参照。

<table>
<tr><td>ローカル
コスト</td><td>活動実績に基づくローカルコスト負担額概算（2013 年 12 月まで）を下に示す（詳細は付属資料２「ミニッツ」の Annex 8 参照）。

ローカルコスト負担額一覧（概算）
<table><tr><th>行政
レベル</th><th>金額（ZMK）</th><th>主な用途</th></tr><tr><td>中央</td><td>597,000</td><td>アフリカ理数科教育強化ネットワーク（SMASE-WECSA）ワークショップ、NEST 会議、コアテクニカル会議運営、国際技術交流、モニタリング</td></tr><tr><td>州</td><td>1,070,000</td><td>ステークホルダー/ファシリテーター・ワークショップ、PEST 会議開催、NEST 会議等参加旅費、モニタリング</td></tr><tr><td>郡、ゾーン、学校</td><td>32,751,000</td><td>ステークホルダーズ・ワークショップ（先行 3 州のみ）、DEST 会議開催、PEST・DEST 会議等参加旅費、モニタリング、授業研究開催</td></tr><tr><td>計</td><td>34,418,000
（615,901,053 円）</td><td></td></tr></table>（参考）教育省教師教育／専門サービス局（TESS）の現職教員研修予算は昨年 2,000,000ZMK であり、財源は全額 DFID/GPE（2015 年まで）である。昨年州のリソースセンターへ州当たり 100,000ZMK、全 10 州へ計 1,000,000ZMK が、プールファンドより支援されている。</td></tr>
</table>

（２）日本側投入実績

表３－２にこれまでの日本側の投入実績を示す（詳細は付属資料２「ミニッツ」の Annex 7～16 参照）。特に短期専門家派遣と本邦研修員の受け入れにあたっては、広島大学国際協力研究科及び関連する組織から手厚い支援を受けてきた。短期専門家派遣に関しては、広島大学国際協力研究科関係者からの推薦を踏まえ、経験豊富な広島大学附属小・中学校の教員を派遣することで現地で開催されたワークショップでザンビア側から高い評価を受けている。また、本邦研修員の受け入れでは、教材研究チームの理科、数学チームに隔年で 2 回の研修を実施するなど、オーダーメイドで手厚い研修を提供している。また、短期専門家として派遣された大学関係者が本邦研修の受け入れに関与するなど、効率的な取り組みが計画されている。広島大学国際協力研究科は 2002 年より「ザンビア・プログラム」として協力隊事務局と連携し、修士課程とザンビアでの青年海外協力隊としての現場経験をセットにしたプログラムを実施中であり、ザンビア教育セクターとの関係が深い。このような経緯を踏まえ、本プロジェクトとは効果的に連携を行ってきている。例えば、広島大学国際協力研究科関係者が成果３の教師教育ジャーナルへの寄稿を行っている。また、本プロジェクトに大きな影響を与えるザンビアの小中学校カリキュラム改訂（理数科）への助言など、広島大学国際協力研究科からは本プロジェクトに対し、包括的かつ継続的な支援が行われている。

表３－２　日本側投入実績

<table>
<tr><th>投入要素</th><th>実績</th></tr>
<tr><td>専門家</td><td>長期専門家 4 名（1 名交代）と短期専門家 2 名が派遣された。さらに、マレーシアから、数学教育と理科教育の 2 名の第三国専門家が派遣された（付属資料２「ミニッツ」の Annex 10 参照）。

専門家の指導分野一覧
<table><tr><th></th><th>指導分野</th></tr><tr><td>長期専門家</td><td>チーフアドバイザー／授業研究マネジメント（理科教育）、授業研究マネジメント（数学教育）（2013 年 1 月で交代）、業務調整／授業研究モニタリング</td></tr><tr><td>短期専門家</td><td>学校運営／数学指導法、数学授業手法</td></tr><tr><td>第三国専門家</td><td>数学教育、理科教育</td></tr></table></td></tr>
<tr><td>研修</td><td>日本、ケニア、マレーシアでの研修に、それぞれ、56 名、7 名、72 名が参加した（詳細は付属資料２「ミニッツ」の Annex 12, 13 を参照）。

本邦及び第三国研修の参加者一覧
<table><tr><th rowspan="2">対象</th><th rowspan="2">実施国</th><th colspan="2">参加者数</th></tr><tr><th>計画
(2012-2013)</th><th>実績
(2012-2013)</th></tr><tr><td>コアテクニカルチームと中央レベルファシリテーター</td><td>日本</td><td>20</td><td>24</td></tr><tr><td>ステークホルダー</td><td>日本</td><td>23</td><td>16</td></tr><tr><td rowspan="3">ファシリテーター</td><td>日本</td><td>12</td><td>16</td></tr><tr><td>ケニア</td><td>12</td><td>7</td></tr><tr><td>マレーシア</td><td>80</td><td>72</td></tr><tr><td>合計</td><td></td><td>147</td><td>135</td></tr></table></td></tr>
</table>

供与機材とローカルコスト	教育省に車両 3 台、ラップトップパソコン 5 台、ビデオカメラ 6 機、プロジェクター2 機が、各州にはそれぞれ 1 台（1 機）ずつが、用意された（付属資料 1 「ミニッツ」の Annex 16 参照）。 日本側が負担したローカルコストは、スキルブック・ジャーナル等の印刷費、専門家旅費、燃料費、メンテナンス、ローカルスタッフ人件費、その他一般業務費等のためのもので、計 1,967,300ZMK である。 機材金額と日本側ローカルカスト負担一覧

年度	2011	2012	2013	合計	
供与機材	1,928,206	39,434	-	1,967,640	2013年
購送機材(参考書籍)	-	-	27,326	27,326	教育省CPD予算
現地活動費	490,751	674,923	801,626	1,967,300	(2,000,000ZMW)
（旅費）	(137,355)	(163,329)	(361,616)	(662,300)	
（印刷費）	(190,890)	(0)	(75,000)	(265,890)	
（現地コンサルタント	(0)	(169,672)	(119,250)	(288,922)	
（事務所一般経費）	(162,506)	(341,922)	(245,760)	(750,188)	
計	2,418,957	714,357	828,952	3,962,266	

*457,707（JPY）/16.75（ZMK/JPY）　（2014/03/16 レート）

３－２　活動実績

プロジェクトは、全体としては、プロジェクト目標の達成に向かって、ほぼ順調に進んでいるが、活動単位では、「1-7：コアテクニカルチームによる新規 7 州へのメンタリング」の実施回数が、当初予定より少なく、「3-1：教授スキルブックの改訂」、「3-2：マネジメントスキルブックの改訂」、「3-8：実施ガイドラインの改訂」の進捗が遅れている。

前者は、先行 3 州のプロジェクト経験者を含むコアテクニカルチームが、派遣チームを編成し、新規 7 州を訪問し、授業研究の実施に関するメンタリングを行うものだが、これまでに 3 回実施された。PDM 上に訪問目標回数は書かれていないが、関係者によると当初はより頻繁に実施することを想定しており、PO にも、2012 年 4 月から 14 カ月間をかけて実施する計画であったことが記されている。メンタリングが不十分だった原因には、そのための予算が十分に確保できず、またタイミングの良い執行ができなかったこと、テクニカルコアチームが、ベースライン調査や教授スキルブック改訂作業に時間が割かれたこと、などが挙げられる。このメンタリング活動回数の少なさが、成果 1 に関する新規州での授業研究の実施率に影響している可能性は考えられる。

スキルブックについては、PO 上では、マネジメントスキルブックから改訂を始めることになっていたが、関係者からの強い要望が確認された、教授スキルブックの改訂を先に開始した。改訂作業は、コアテクニカルチームを中心に 2012 年 6 月にすでに開始されていたが、先行 3 州から集めた 30 名の執筆者のレベルの差が大きく、分業がうまくいかなかったこと、予算の関係で十分な作業日程が取れなかったこと、執筆の中心メンバーが改訂の質を高く設定したことなどにより、印刷完了が最終的に、2014 年 3 月となった。マネジメントスキルブックと授業研究実施ガイドラインは、今後、改訂作業を始める予定である。

３－３　成果の達成状況

（１）成果１

成果１：校内研修制度が授業研究を通じ強化される。 指標 1-i　：授業研究の実施率（全対象校の 70%） 指標 1-ii：チェックリストで確認される授業研究の質

成果１の達成状況は、量的な面では、実施率が 61.1%であり目標値の 70%に近づいている。質的な面では、指標データが不足しており判断が困難である。

１）指標 1-i（授業研究の実施率）に関する達成状況

2014 年 1 月に、プロジェクトが各州の PEST から集計した授業研究の実施状況を、表３－３に示す。プロジェクトでは、対象学年を先行州で１－12 学年、新規州で８－12 学年としているため、対象郡（全国 10 州の 89 郡中 65 郡）の中で、それらの学年を有する学校が対象校となる。

表３－３　対象校における授業研究の実施率

	Mentor Provinces			New Provinces							Total	Total	Total
Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Mentor	New	
A	589	482	412	54	128	77	36	101	56	212	1,483	664	2,147
B	614	585	515	166	225	295	240	284	134	452	1,714	1,796	3,510
C(%)	95.9	82.4	80.0	32.5	56.9	26.1	15.0	35.6	41.8	46.9	86.5	37.0	61.1

A：授業研究を実施した対象校の数
B：先行 3 州で１－12 学年を有する学校数または新規 7 州で８－12 学年を有する学校数
C：A/B（%）
出所：STEPS プロジェクト

ａ）授業研究の実施率

授業研究の実施率は、全国平均値で見ると 61.1%であり目標値の 70%に近づいている。先行プロジェクトである SMASTE フェーズⅡで８－12 学年での授業研究の実施経験を有し対象学年を１－７学年にも広げている先行 3 州では、いずれも実施率が目標値である 70%を超えそれらの平均が 86.5%と高い。一方で、本プロジェクトで８－12 学年において授業研究を初めて正式導入している新規 7 州では、いずれも目標値に達せず平均も 37%と低く、先行州の好調な状況と対照的である。

ｂ）授業研究の実施報告の仕組み

各学校の授業研究の実施状況の報告は、原則として、学校→ZEST→DEST→PEST の順に、学校、ゾーン、郡、州のレベルの状況がその構成員の報告書を参考として上部の監督組織によってまとめられ、更に上部の組織に提出される。各学校はゾーンに所属し、ゾーンの代表校の教員のなかからゾーン研修コーディネーター（ZIC）が任命される。ZIC は、ZEST のメンバーであり、各学校の授業研究の実施状況をモニタリングし、各学期に一度、各校から実施報告書を受領する。さらに、ゾーンの授業研究実施報告書を作

成し、学校作成の実施報告書と共に、郡（DEST）に提出する。郡は、各ゾーンからの報告書を基に郡の実施状況報告書を作成し、州（PEST）に提出する。同様に、州は州レベルの実施報告書を国（NEST）に提出する。学校へのモニタリングは、DEST（中央州カブエ郡で年間約 25 回、コッパーベルト州ンドラ郡で年間約 90 回）によっても行われ、その際は ZEST のメンバーも加わる。各段階での報告書提出の回数は各学期に一度であるが、ステークホルダーズ・ワークショップが実施される時期は、そこで、報告書の提出状況も含め、実施状況が報告され、確認される。なお、上記、授業研究の各州の実施状況は、PEST（州）からの教育省現職教員課（NEST のコアテクニカルチームを担当）への報告に基づいている。

一方、授業研究実施に関するゾーンの機能や活動内容は全国的に統一されていないのが現状である。先行 3 州では、ZIC には、学校での授業担当数が少なめに調整され、他校へのモニタリングを含めた ZIC の業務のための配慮が与えられるが、新規 7 州では、そのような配慮がなされていないこともあり、その場合、ZIC の十分な活動には困難が伴う。さらに、同一ゾーンといっても、学校が大きく離れている場合、モニタリング活動やその他の連絡が容易でないことが想像できる。

c）授業研究実施率の低さの要因

表３－４　州別・学校別授業研究実施率（2014 年 1 月時点）

Name of Province	Central	Northwestern	Copperbelt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Total National
A: 学校数	614	585	515	166	225	295	240	284	134	452	3510
B: 実施校数	589	482	412	54	128	77	36	101	56	212	2147
C: 実施率	95.9%	82.4%	80.0%	32.5%	56.9%	26.1%	15.0%	35.6%	41.8%	46.9%	61.2%
Total No. of schools G10-12	11	0	0	3	0	38	0	0	9	15	76
No. of schools G10-12 implementing LS	11	0	0	3	0	37	0	0	9	13	73
Percentage	100.0%	0.0%	0.0%	0.0%	0.0%	97.4%	0.0%	0.0%	100.0%	86.7%	96.1%
Total No. of schools G8-12	41	68	70	16	37	257	34	31	4	20	578
No. of schools G8-12implementing LS	36	68	70	16	26	40	23	20	4	20	323
Percentage	87.8%	100.0%	100.0%	100.0%	70.3%	15.6%	67.6%	64.5%	100.0%	100.0%	55.9%
Total No. of schools G1-12	9	0	0	0	0	0	2	0	0	0	11
No. of schools G1-12 implementing LS	9	0	0	0	0	0	2	0	0	0	11
Percentage	100.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Total No. of schools G1-9	335	194	0	147	188	0	204	253	121	417	1859
No. of schools G1-9 implementing LS	335	156	0	35	102	0	11	81	43	179	942
Percentage	100.0%	80.4%	0.0%	23.8%	54.3%	0.0%	5.4%	32.0%	35.5%	42.9%	50.7%
Total No. of schools G1-7	218	323	445	0	0	0	0	0	0	0	986
No. of schools G1-7 implementing LS	198	258	342	0	0	0	0	0	0	0	798
Percentage	90.8%	79.9%	76.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	80.9%
Total No. of schools G1-4	0	0	0	0	0	0	0	0	0	0	0
No. of schools G1-4 implementing LS	0	0	0	0	0	0	0	0	0	0	0
Percentage	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

授業研究実施率が、先行 3 州で高く新規 7 州で低かった要因を表３－４を参照しつつ、以下のとおりまとめた。

① 先行 3 州では、SMASTE フェーズⅡ終了前の 2010 年において、既に 10－12 学年で 100%近く、８－９学年でも 70%以上の実施率に達しており、特に中央州では１－７学年においても 75%の実施率があり、本プロジェクトの中間地点において目標の 70%を達成することは容易であった。

② ザンビアでは、現在、従来の１－９学年までの基礎教育学校と 10－12 年の高校とで成り立っていた学校制度が、１－７年までの初等学校と８－12 年の中等学校に移行中であり、その過程で、さまざまな学年幅をもつ学校が混在している。今回の中間レビューで検討したデータは、各州からの報告に基づいているが、州によっては、ゾーンまたは郡のレベルで、学年分類に応じた正確な件数の計数が行われていない可能性

も考えられる。ルサカ州の場合、８－12 学年の授業研究の実施率は、10－12 学年制の学校で 38 校中 37 校実施、８－12 学年制の学校で 257 校中 40 校の実施で、合計で 26.1%となっているが、８－12 学年制の学校数が他州に比べ異常に多い。この数値が誤りだとすれば、分母が大きくなり、実施率を実態に比べ低めている可能性がある（プロジェクトではルサカ州に確認を求めたが、州も実態を把握できていないため、修正は行われなかった）。

③　学年制の学校において、新規州での実施率が低くなっている（Muchinga 州 5.4%、Northern 州 23%、Luapula 州 32%）。１－９学年制の学校では、８－９学年で理数科を専門に担当する教員が少数であることにより授業研究活動の単独実施が困難であり、近隣校とクラスターを形成し一定数の理数科教員を確保することになる。このため、会場校以外の教員にとっては勤務校を離れて授業研究に参加することが求められるが、新規州ではこのための体制が未整備であることが実施校数を低めている原因とも考えられる。また、学校内で 2～3 名の少数の教員により授業研究が実施されても、大部分が初等教育の学年である１－９年制学校では、校長など学校幹部により活動がサポート、認識されていないため、報告書として報告されていない可能性も考えられる。

④　新規 7 州の授業研究の実施率の低さの原因には、コアテクニカルチームと先行 3 州の経験者によるメンタリング活動が、十分に実施できなかったことも考えられる。

d）指標 1-i の達成見込み

本プロジェクトの先行プロジェクトであるフェーズⅠ及びフェーズⅡでの、８－12 学年の理科の授業研究を導入した際の、実施率は以下のとおりであった。

表３－５　先行フェーズでの授業研究実施率の推移

		12 月後	14 月後	16 月後	25 月後
フェーズⅠ（2005/10-2007/10）	中央州	78%	83%		
フェーズⅡ（2008/2-2011/2）	北西部州（高等学校*）			98%	98%
	（基礎教育学校**）			68%	67%
	コッパーベルト州（高等学校）			81%	100%
	同上　（基礎教育学校）			63%	100%

*高等学校：10－12 学年を有する学校
**基礎教育学校：８－９学年を有する学校
出所：「ザンビア国理科研究授業支援プロジェクト終了時評価調査報告書」及び「ザンビア国 SMASTE 授業研究プロジェクトフェーズ２終了時評価報告書」

表３－５で示された先行 3 州の授業研究導入時の実施率と表３－４の本プロジェクト新規 7 州の州単位の実施率を比べると、プロジェクト開始後 27 カ月後の本プロジェクトのものが明らかに低い。しかしながら、新規 7 州でも、10－12 学年学校（高等学校）を見ると、新規州の 3 州で、87%以上の実施率を示し、８－12 学年学校（新制中等学校）では、計数方法の正確さに疑問が残るルサカ州以外は、最低の Luapula 州でも 65%、北部州、南部州、西部州では、学校数自体がルサカ州と比べると少ないが 100%に達しており、これらの学校での実施率は、現時点でほぼ目標値に達しているといえる。

注目すべきは、新規州での旧制基礎教育学校（１－９学年）での８－９学年の理数科担当教員による授業研究の実施と実施率計算の方法である。旧制基礎教育学校の８－９学年は、現在新制中等学校に移行中である。表３－４からは、移行の状況が州によって異なることが読み取れる。仮に、移行措置のため８－９学年のうち９学年だけが中等学校に移行し、８学年だけが元の学校に残った場合、それまででも少数であった理数科担当教員が半減し、授業研究の実施は更に困難となる。その状況でそのような学校が授業研究の対象校として計算されれば、実施率は低く抑えられることになる。逆に、移行が完了すれば、授業研究の実施に困難な条件をもつ１－９学年の対象校がなくなり、実施率の向上が期待できる。

したがって、2015 年 12 月予定のプロジェクト終了時における、授業研究実施率は、学校制度の移行状況に大きく依存することが予想される。新規 7 州では、2014 年 1 月時点において、１－９学年（旧制基礎教育学校）以外の学校の実施率は、ルサカ州を除き、目標値以上かそれにほぼ近い値を示しているので、移行が完了していれば、全州での目標値の達成の見込みは高い。

２）指標 1-ii（授業研究の質）に関する達成状況

プロジェクトで実施されている授業研究の質に関するデータの提出が各州に求められ、2014 年 2 月までデータ収集が実施された。5 州 27 件のデータが提出されたが、プロジェクトで実施されている授業研究の質を判断するためは、量的に不十分といえる。またこうした手続き的なチェックリストが授業研究の質を適切に評価できるのかにつき、プロジェクト日本人専門家と調査団で協議を行った（協議を踏まえた提言は第 4 章を参照）。

授業研究の質は、モニタリングフォーマット（付属資料２「ミニッツ」の Annex 4 参照）に従って、プロジェクトで定めた授業研究実施のための重要な 8 つのステップが、どれだけ適切に実施されたかをイエス・ノーの 2 段階で測ることにより評価される。8 つのステップは以下のとおりである。

Step Ⅰ　：授業研究の設定課題の定義
Step Ⅱ　：学習指導案の共同作成
Step Ⅲ　：授業の実施
Step Ⅳ　：授業についての協議と振り返り
Step Ⅴ　：授業案の改善
Step Ⅵ　：改善指導案に基づく授業の実施
Step Ⅶ　：2 回目授業についての協議と振り返り
Step Ⅷ　：振り返り結果の記録と共有

表３－６に、モニタリングシートを使って得られた、授業研究の質のデータの集計結果を示す。2 回目授業（Step Ⅶ）の値が 1 回目授業（Step Ⅲ）のものより高く、活動の記録と共有（Step Ⅷ）の判定値が、全体に比べ低い傾向がみられる。

表３－６　授業研究の質

Province	Central	North Western	Copper belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG
Sample No.	NA	3	9	NA	NA	NA	2	7	6	NA
8 steps	NA			NA	NA	NA				NA
I	NA	2.00	1.98	NA	NA	NA	2.00	2.00	2.00	NA
II	NA	1.96	1.96	NA	NA	NA	2.00	1.71	1.67	NA
III	NA	1.83	1.90	NA	NA	NA	1.88	1.83	1.55	NA
IV	NA	2.00	1.99	NA	NA	NA	2.00	1.83	1.93	NA
V	NA	2.00	1.83	NA	NA	NA	1.75	1.58	2.00	NA
VI	NA	2.00	2.00	NA	NA	NA	2.00	1.75	1.56	NA
VII	NA	2.00	2.00	NA	NA	NA	2.00	1.85	1.81	NA
VIII	NA	1.71	1.98	NA	NA	NA	0.71	1.88	1.43	NA nine

出所：STEPS　プロジェクト

（２）成果２

成果２：校内研修実施のために必要な中核人材が育成される。
指標 2-i　：研修を受講した中核人材の数
指標 2-ii　：中核人材による自身の業務に対する自己評価
指標 2-iii：中核人材に対する教員による評価

成果２は順調に発現している。教育省の人材育成計画の中に JICA の研修が効果的に活用され、中核人材の育成が計画的に実施されてきた。中核人材とは、ステークホルダーとファシリテーターに加え、コアテクニカルチームメンバーを意味する。専門家が、研修効果を上げるために準備段階から帰国後のフォローまで積極的に関わったことも、成果の発現に影響した。

１）指標 2-i（研修受講者数）に関する達成状況

表３－７は、付属資料２「ミニッツ」の Annex 11: Plan for Capacity Development of Resource Personnel under STEPS Project で示す研修計画のうち、本プロジェクト期間中の本中間レビューまでの研修予定者数と実績をまとめたものである。日本研修とケニアとマレーシアにおける第三国研修には、ほぼ計画どおりの研修参加実績を残し、ザンビア国内でのステークホルダーとファシリテーターの研修では、合計で計画を 1,100 人ほど上回る実績を残している。国外の研修参加者は、帰国後、ステークホルダーズ・ワークショップや種々の会合で、研修経験の報告をする機会が与えられ、それを他の教員や行政官と共有することで研修実施の効率性を高めている。

表３－７　中核人材研修計画数と実績

Category	Place	No. of Participants	
		Plan (2012-2013)	Achievement (2012-2013)
Core Technical Team and National level Facilitator	Japan	20	24
Stakeholders	Japan	23	16
	Zambia	1,600	2,749
Facilitator	Kenya	12	7
	Japan	12	16
	Malaysia	80	72
	Zambia	370	323
Total		2,117	3,207

２）指標 2-ii（中核人材の自己評価）に関する達成状況

指標に示された、自己評価の一般的傾向を確認できるようなデータは、[２－３　評価調査の制約・限界]に記載のとおり入手できず、達成状況を判断することはできなかった。しかしながら、プロジェクトの研修機会が、授業研究を推進する中核人材にとって、有効なものであることが、以下のようなインタビュー結果から理解できた。

中央州とコッパーベルト州でのインタビューでは、多くの研修経験者が、日本での研修やザンビアでの日本人専門家による生徒中心型の授業デモンストレーションで、実際に生徒が主体的に学習をする様子を観察できたことの有用性を指摘した。同じく、中央州とコッパーベルト州で、異なる郡の DEST メンバーから、彼らが参加した州レベルのステークホルダーズ・ワークショップは、彼らが主体となって実施することになる郡レベルのステークホルダーズ・ワークショップの運営に必要な知識を与えてくれ、極めて有用であり、州レベルのワークショップへの参加の経験がなければ、郡レベルのワークショップの運営は成り立たないだろうとの発言があった。

３）指標 2-iii（中核人材に対する教員による評価）に関する達成状況

指標に示された、受益者による評価の一般的傾向を確認できるようなデータは、２－３節に記載のとおり入手できず、達成状況を判断することはできなかった。一方、州や郡レベルでは、中核人材が研修の成果を他の教員や行政官と共有できる機会が用意されており、特に海外での研修に参加した場合、ステークホルダーズ・ワークショップや、専門教科関連の会議で研修成果の報告が求められることが多いとのことをザンビア側関係者からのインタビューで確認している。これは、ワークショップや会議の関係者が、研修参加者が得た研修成果へ何らかの期待をもっていることの表われであり、期待を裏切らない経験が継続されていることを示唆するものである。

（3）成果３

成果３　：校内研修のために必要な参考資料が開発される。 指標 3-i ：学校に配布された参考資料（スキルブック、ジャーナル、ガイドライン等） 指標 3-ii：資料の利用者（教員等）による評価

成果３については、参考資料の改訂作業が、全体的に遅れている（[３－２　活動実績]を参照のこと)。これまでの授業研究の普及に際しては、前フェーズで開発された実施ガイドラインが 3,000 冊増刷され、教授スキルブック、マネジメントスキルブックについては、前フェーズの在庫品を活用することでまかなってきた。

１）指標 3-i（開発された参考資料の学校での利用可能性）に関する達成状況

PO 上の改訂作業順序を変更し、教授スキルブックの改訂を最初に取り掛かったが、この作業が遅れたため、続くべき、マネジメントスキルブックと授業研究実施ガイドラインの改訂が進んでいない。教授スキルブックは改訂が終わり、2014 年 3 月、中間レビュー調査中に 15,000 冊の印刷が完了した。

教育実践集は、第１巻が発行、3,000 部が印刷され、第２巻が、2014 年 3 月の中間レビュー中に印刷中の状態であった。

２）指標 3-ii〔資料の利用者（教員等）による評価〕

指標に示された、利用者による評価の一般的傾向を確認できるようなデータは、２－３節に記載のとおり入手できず、達成状況を判断することはできなかった。

授業研究の普及のために、プロジェクトのフェーズⅡで開発された授業研究実施ガイドラインが 3,000 部増刷され、同じくフェーズⅡで開発された教授スキルブックとマネジメントスキルブックの在庫品と共に学校及び関係機関へ配布された。

中央州とコッパーベルト州での、PEST や DEST、及び、教員のインタビューの際には、授業研究実施ガイドラインや、スキルブックを参照しながら説明を受けることが何度かあり、これらの参考資料が身近に活用されていることがうかがわれた。このほか、プロジェクト紹介用のパンフレットが、プロジェクト活動の理解の促進に役立っているとの説明を受けた。

３－４　プロジェクト目標達成状況

プロジェクト目標　：教員の授業実践能力が校内研修を通じ強化される。 指標１：理数科の授業観察で見られる教員の授業実践能力 指標２：教員による授業実践能力の自己評価 指標３：生徒による教員の教え方の評価

教員の指導能力に関し、サンプリングした授業において、指標１と指標３の観点で、ベースライン平均値からの判定値の増大がみられた。ただし、指標に目標値が設定されておらず、サンプル数も不十分であることから、プロジェクト目標の達成見込みを判断することは困難である。

（1）指標 1（授業観察で見られる授業実践能力）に関する達成状況

プロジェクトで開発された授業観察ツール（付属資料 2「ミニッツ」の Annex 2 参照）を使用して、2014 年 1 月から 2 月にかけて、各州の対象校において教員の授業実践能力が測定され、全 10 州からデータが提出された。観察項目は、授業計画能力（P）と授業実施能力（D）についての 4 点満点の総合判定（P、D）と 2 点満点の観点別判定（P-1、P-2、P-3、D-1、D-2、D-3）により構成されている[4]。中間レビューでは、主に総合判定結果が参照され、中間レビュー後の作業で観点別判定結果についても分析を行った。州別の総合判定結果及び観点別判定の詳細は付属資料 3 のとおり。総合判定のためにルーブリックが用意され、観点別判定は項目ごとに数件の細項目がありそれらの平均が判定値となっている。観点別判定の項目は以下のとおりである。

P-1：授業目標設定の能力
P-2：授業全体を構成する能力
P-3：生徒を配慮する能力
D-1：計画に従って授業を実施する能力
D-2：生徒の主体的学習を強化する能力
D-3：授業実施の基本的能力

以下に測定データとプロジェクト目標の達成状況に関する分析を示す。なお、時間、費用等の制約のため、サンプルは各州の教育局所在地の郡で実施し、比較対象のベースラインデータも、対応する郡のものを用いた。サンプル数が少なく、ベースライン調査のものとも大きな差があることを前提に、平均値の比較を行った。

授業計画に関する能力では、数学、理科ともに、総合判定値 P の全体平均にベースラインデータとの比較で増加がみられ、数学では新規州の平均値に、より大きな増加がみられた。理科では、先行州と新規州の平均値の増加はほぼ同等であった。授業実施に関する能力では、総合判定値 D の全体平均のベースラインとの比較において、数学で減少が、理科で増加がみられた。

中間レビューではサンプル数が限られており、単純にベースライン調査の全国平均と今回の全国平均を比較してプロジェクト目標の達成見込みを言うことはできない。しかし、以下のとおり、 算数の授業実施の項目以外では正の変化がみられている。

[4] 総合判定は必ずしも観点別判定をまとめたものとは限らない。例えば、D-2 の総合判定は主体的な学習のカバレッジ（どれくらいの生徒が主体的学習に取り組んでいるか）を問うものである一方、D-2-1~3 の観点別判定は、主体的学習を構成する各要素を確認するものになっている。よって総合判定だけでなく、観点別判定も含め、比較検討することが妥当である。

表３－８　授業計画（P）と授業実施（D）のベースライン調査との比較

	Lesson Planning		Lesson Delivery	
	Math	Science	Math	Science
Baseline	2.71 (379)	2.62 (375)	1.89 (379)	1.80 (375)
Mid-term	2.91 (31)	2.80 (31)	1.75 (29)	2.26 (29)
Difference	+0.20	+0.18	-0.14	+0.46

（２）指標２（教員による自己評価）に関する達成状況

今回の調査では、当該指標に関する客観的データは、入手できなかった。しかしながら、インタビューに応じた PEST や DEST のメンバーは、一般的に教員が、協働を通して授業計画を改善し、授業観察とそれに続く協議の中から指導技術を学んでいることを見ていると述べている。

（３）指標３（生徒による教員の教え方の評価）

プロジェクトで開発された、教師の指導する授業についての生徒に対する質問票（付属資料２「ミニッツ」の Annex 3 参照）の問題 1 から 6 を使用して、2014 年の 1 月から 2 月にかけて、各州の対象校において教員の授業実践能力と生徒の学習状況が測定され、全 10 州中 8 州からデータが提出された。同様の調査は、ベースライン調査において実施されており、今回それらのデータとの比較が行われた。サンプル数が少なく、郡や州レベルでの比較は困難であるが、参考として、表３－９に結果を示す。評定は 2 点満点で付けられている。

表３－９　学習の達成度

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline	1.57	1.48	1.41	1.48	1.40	1.33	1.64	1.58	1.48	1.54	1.40	1.48	1.49*
(Sample No.)	(220)	(170)	(240)	(630)	(100)	(100)	(100)	(100)	(100)	(80)	(100)	(680)	(7580)
Mid-term	NA	1.60	1.67	1.63	NA	1.67	NA	1.57	1.57	1.53	NA	1.57	1.58
(Sample No.)		(14)	(8)	(22)		(6)		(10)	(81)	(10)		(107)	(129)
Difference	NA	0.12	0.26	0.14	NA	0.34	NA	-0.01	0.09	-0.01	NA	0.09	

*: 全サンプルの平均値
出所：STEPS プロジェクト

生徒の回答を基にした学習達成度について、全体平均値がベースライン平均値より増加している。先行州と新規州それぞれ 2 州ずつで増加を示している。先行州の平均値と平均値の増加率は新規州のものより上回っている。

３－５　上位目標達成状況

上位目標：理数科授業での生徒の学習方法が改善する。 指標１：理数科の授業観察で見られる生徒の学習活動 指標２：生徒による授業中の学習活動の自己評価

授業観察結果から、生徒の学習方法が、ベースラインデータよりも改善される傾向がみられた。生徒の自己評価からは、学習の質に関しての認識に、ベースラインデータよりも改善がみられた。ただし、指標に目標値が設定されておらず、サンプル数も不十分であることから、プロジェクト目標の達成見込みを判断することは困難である。

（１）指標１（授業観察で見られる授業の質）に関する達成状況

プロジェクトで開発された授業観察ツール（付属資料２「ミニッツ」の Annex 2 参照）を使用して、2014 年 1 月から 2 月にかけて、各州の対象校の理数科授業において生徒の学習活動が観察され、全 10 州中 9 州からデータが提出された。観察項目は、[授業目標の達成度(L1)]と［主体的学習の程度（L2)］についての 4 点満点の総合判定（L1、L2）と、観点別判定（L-1、L-2、L-3）により構成されている。総合判定のためにルーブリックが用意され、観点別判定は項目ごとに数件の細項目がありそれらの平均が 2 点満点のかたちで判定値となっている。観点別判定の項目は以下のとおりである。

L-1：学習達成の程度
L-2：学習の質
L-3：作業能力

ここで、L1、L2 は総合判定であり、L-1、L-2、L-3 は、観点別判定で、別個の指標であることを断っておく。ルーブリックと観点別判定のためのチェック項目は、付属資料２「ミニッツ」の Annex 3 を参照。

以下に測定データとプロジェクト目標の達成状況に関する分析を示す。なお、時間、費用等の制約のため、サンプルは各州の教育局所在地の郡で実施し、比較対象のベースラインデータも、対応する郡のものを用いた。サンプル数が少なく、ベースライン調査のものとも大きな差があることを前提に、平均値の比較を行った。

本レビューではサンプル数が限られており、単純にベースライン調査の全国平均と今回の全国平均を比較して上位目標の達成見込みを言うことはできない。しかし、以下のとおり、総合判定の［授業目標の達成度（L1)］と［主体的学習の程度（L2)］に関して、算数の主体的学習の項目以外では正の変化がみられている。

表３－10　［授業目標の達成度（L1)］と［主体的学習の程度（L2)］のベースライン調査時との比較

	Attainment Aspect		Subjective Learning	
	Math	Science	Math	Science
Baseline	1.92 (379)	1.77 (375)	1.81 (379)	1.62 (375)
Mid-term	1.99 (29)	2.16 (29)	1.81 (29)	1.87 (29)
Difference	+0.07	+0.39	0	+0.25

（２）指標２（生徒による授業中の学習活動の自己評価）

プロジェクトで開発された、教師の指導する授業についての生徒に対する質問票（付属資料２「ミニッツ」の Annex 3 参照）を使用して、2014 年の 1 月から 2 月にかけて、各州の対象校において教員の授業実践能力と生徒の学習状況が測定され、全 10 州中 9 州からデータが提出された。質問票の 7 番から 11 番までが学習の質に関するもので、12 番から 18 番までが作業能力に関するものである。同様の調査は、ベースライン調査において実施されており、今回それらのデータとの比較が行われた。サンプル数が少なく、郡や州レベルでの比較は困難であるが、参考として、表３－11、12 に結果を示す。評定は 2 点満点で付けられている。

表３－11　学習の質に関する生徒の理解

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline	1.65	1.51	1.52	1.56	1.51	1.54	1.75	1.64	1.51	1.60	1.51	1.58	1.58*
(Sample No.)	(220)	(170)	(240)	(630)	(100)	(100)	(100)	(100)	(100)	(80)	(100)	(680)	(7580)
Mid-term	NA	1.60	2.00	1.75	NA	1.55	NA	1.75	1.64	1.51	1.60	1.63	1.65
(Sample No.)		(14)	(8)	(22)		(6)		(10)	(81)	(10)		(107)	(129)
Difference	NA	0.09	0.48	0.18	NA	0.01	NA	0.11	0.13	-0.09	NA	0.05	

*: 全サンプルの平均値
出所：STEPS プロジェクト

学習の質に関する生徒の理解について、生徒の理解に基づく学習の質について、全体平均値はベースライン平均値より高い。先行州が 0.18 ポイント、新規州が 0.05 ポイントと、ともに判定値が増大した。

表３－12　作業能力に関する生徒の理解

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline	1.58	1.45	1.36	1.46	1.27	1.30	1.61	1.59	1.33	1.51	1.48	1.44	1.46*
(Sample No.)	(220)	(170)	(240)	(630)	(100)	(100)	(100)	(100)	(100)	(80)	(100)	(680)	(7580)
Mid-term	NA	1.54	1.68	1.59	NA	1.46	NA	1.60	1.42	1.54	NA	1.45	1.47
(Sample No.)		(14)	(8)	(22)		(6)		(10)	(81)	(10)		(107)	(129)
Difference	NA	0.09	0.32	0.13	NA	0.16	NA	0.01	0.09	0.03	NA	0.01	

*: 全サンプルの平均値
出所：STEPS プロジェクト

生徒の理解に基づく作業能力の理解について、全体平均値はベースライン平均値とほぼ同じである。先行州では、判定値の増大があり、その平均値もベースラインデータを上回った。コッパーベルト州の 0.32 ポイントと東部州の 0.16 ポイントの伸びが目立ち、減少した州はない。

３－６　実施プロセスに関する特記事項

＜ナショナルコアテクニカルチームの編成＞

プロジェクト開始以来、ナショナルコアテクニカルチームは、教授スキルブックの改訂、モニタリングツールの考案、ファシリテーターズ・ワークショップ等での技術指導など、重要な役割を担ってきており、今後も、生徒による主体的な学習の推進など、今まで以上に、プロジェクトの質の面の向上へ貢献することが期待されている。これまで、人員規模の不足や、過重業務量等の問題が指摘されてきたこともあり、2014 年 3 月 11 日の NEST 会議で、管理、数学、理科の 3 グループ 27 名体制に拡充することが提案された。

一方、同会議では、全国への普及発展と地方人材の育成の面から、新規州からの積極的メンバー採用を願う意見が出され、メンバー構成等は、更に検討されることになった。地方からのメンバー採用は重要だが、同時に、プロジェクトがこれまで育成してきた人材の活用や、今後の育成計画、更にはチームの機動性、予算等、他の要素も絡む問題である。チームのあり方は、本プロジェクトの終了後にも大きな影響を及ぼすことなので、今後、特に注目する必要がある。

３－７　評価５項目（妥当性を中心に）

（１）妥当性：**高い**

１）ザンビア政府の政策との整合性

教育政策文書である「Educating Our Future」（1996 年）において、学校ベースの（教員の）継続的職能開発（SBCPD）が教育の質向上の有効な方策ととらえられ、それに対応し第 6 次国家開発計画（2011～2015 年）及び第 3 次国家実施計画（2011～2015 年）において、理数科を中心とする教育の質の向上が優先目標に設定されている。また、教育省は、SBCPD マスタープランを作成し、SBCPD 実施への強い姿勢を示している。

２）日本政府の ODA 政策との整合性

ザンビアの教育の質向上への支援は、持続的な経済成長を支える社会基盤の整備の一環として、重要分野としてとらえられている。

３）アプローチの適切性

授業研究の手法は、ザンビア独自の教員研修の枠組みである SPRINT によく適合し、同時に、有効な研修方法として SPRINT を活性化させた。

４）ターゲットグループ選定の妥当性

８－12 学年の教員を対象としていた先行 3 州では、対象範囲を基礎教育の１－12 学年に拡大し、新規 7 州では、先行プロジェクトの経験が生かせる、８－12 年の教員に絞ったことは妥当である。

（２）有効性：**現段階での判断は困難ながらも、有効性向上の傾向あり**

１）判断材料の不足

プロジェクト目標とアウトプットの達成状況を見るデータのサンプル数が不十分であり（プロジェクト目標の指導技能の向上を見る教師のサンプル数は数学 29 件、理科 31 件、比較対象のベースラインデータは 379 件と 375 件）、また、指標の到達目標値が設定されておらず、現時点において、プロジェクト終了時点での達成度の判断は困難である。また、それに基づく有効性の判断も困難である。

２）プロジェクト目標達成状況

指導案作成面では理科数学ともに向上がみられ、授業実施面では理科にのみ向上がみられた。

３）プロジェクト目標と成果との関係

成果 1 の授業研究実施のプロジェクト目標への貢献は、授業研究実施率の高い先行 3 州で大きく、実施率の低い新規 7 州ではまだ小さい。中核人材の養成は計画どおり進行し、授業研究の拡大と実施に貢献している。

（３）効率性：**中程度**

１）SPRINT の枠組みの活用

ザンビアの教員研修制度である SPRINT の枠組みを活用することにより、人材、予算、施設、制度等の面での新たな投入を節約できた。

２）先行プロジェクトの経験の活用

先行 3 州が新規 7 州を支援する構想は、不十分な予算や非効率な執行プロセスにより十分に実現していないが、先行プロジェクトの経験は、国レベルの会議やコアチーム主導による新規州への訪問などを通し、授業研究が新規州で進展するのに貢献している。

３）その他

コアチームの過重な作業量と予算執行に係る時間の長さが、国レベルのいくつかの活動の原因となった。

（４）インパクト：**やや高い**

１）上位目標とプロジェクト目標との関係

教師の指導技術が強化されるというプロジェクト目標が達成されれば、生徒の学習が改善されるという上位目標が達成される可能性は大きいが、現時点でのプロジェクト目標の達成見込み判断が困難でもあり、上位目標達成見込み判断は時期尚早である。

２）上位目標達成以外のインパクト産出の可能性が大きい：

・対象県や対象学年以外への授業研究の拡大が確認された。

・プロジェクトの教材研究チームのメンバーが、初等学校及び中等学校の数学理科のカリキュラム開発と小 1 算数教科書の作成準備に貢献した。

・2013 年にアフリカ 27 カ国が参加する SMASSE-WECSA 技術会合をザンビアでホストし、その他、ナミビア、ブルンディ、マラウイ、セネガルからの視察団を受け入れるなど、ザンビアの授業研究の実践がアフリカ各国と共有された。

（５）持続性：**やや高い**

１）政策面

国家教育政策において、アクセスと公正とともに教育の質が強調され、（教員の）継続的な職能開発（Continuing Professional Development：CPD）の振興は質向上の重要戦略と位置づけられており、この傾向は継続すると考えられる。

２）財政面

学校レベルでの授業研究を継続するための予算は、SPRINT の枠組みの中で確保されるが、モニタリングや指導技術向上のための活動を活発にするためには、州レベルで関連予算の配分を拡大し、予算執行がタイムリーになされるなどの効率化が求められる。また、プロジェクト期間中日本側が負担していたスキルブックやガイドラインの将来の財源確保がまだ不明確である。

付属資料２「ミニッツ」の Annex 8 によると、プロジェクト開始から 2013 年 12 月までの約 2 年間にプロジェクト活動に使われた経費は、中央、州、郡のレベルで、それぞれ 59 万 ZMK、107 万 ZMK、3,275 万 ZMK（1 年間では 30 万、54 万、1,600 万 ZMK）と概算されている。郡レベルの経費の 88％は、郡や州レベルの会議への参加費用である。教育省現職教員課では、2014 年の予算として、2 百万 ZMK の現職教員強化関連予算の中から、ファシリテーター養成、NEST 会議、CPD 研修のプロジェクト関連経費として 82 万 ZMK を計上している。これは、これまでのプロジェクト年間コストに十分対応できるレベルのものと考えられる。州政府予算の一例として、中央州では、CPD 活動用に約 8 万 ZMK が州リソースセンター関連経費、5 万 ZMK が現職教員研修関連予算として組まれている。前述のとおり 10 州で年間 54 万 ZMK のコストは、1 州当たり 5 万 ZMK であるから、州政府では、CPD 活動全体との調整により授業研究の財源確保が必要となる状況である。郡政府予算の一例として、中央州カブエ郡へは、人件費を除いた初等教育の運営予算として、年間約 90 万 ZMK が配分されている（Grant to Free Primary Education）。65 対象郡で年間 1,600 万 ZMK のコストは 1 郡当たり 25 万 ZMK となる。この予算額が変わらなければ、郡レベルでは、会議参加旅費を節約したかたちの授業研究の持続的実施が必要となると考えられる。

３）組織面

NEST Administrative Committee で教師教育局から提案されたように、コアテクニカルチームが 27 名に増員され、マネジメント、数学、理科の 3 部門に再構成することになれば、これまでよりも授業研究における教材研究の取り組みなど技術面での活動の強化が見込まれる。ザンビアでは、教材研究チームメンバーを含め、有能な人材が州に散在している。SPRINT の枠組みを活用し、これらの人材を必要に応じ、国レベルまたは地方レベルの活動に活用できる。

４）技術面

教材研究チームをはじめ、技術面での中核人材は、計画どおり順調に養成されている。これらの人材をいかに活用するかが今後の課題である。教授スキルブック、マネジメントスキルブック、授業研究実施ガイドラインは学校レベルでの授業研究の質を維持するうえで有用である。教師教育ジャーナルの技術面での持続性については、編集委員に求められる技術的な能力が高いため、これまでと同様の質を継続していけるか、現段階では未確定な部分がある。

３－８　阻害・貢献要因

（１）効果発現に貢献した要因の分析

１）計画に関すること

・授業研究を主とする校内研修の充実を現職教員強化の中心に置くザンビア政府の教員政策と強く合致する本プロジェクトの計画づくりが、オーナーシップ、妥当性、効率性、持続性に対し、大きく貢献している。

・教育省の SBCPD 実施の枠組みである SPRINT の中にプロジェクトが位置づけられたことで、既存の人材、予算、施設、制度等を十分に活用できたことにより、新たな投入を節約できた。プロジェクトの以前から、SPRINT の中で、授業の観察や観察後の議論は行われており、これも、授業研究が短期間に受け入れられる要因となった。

・プロジェクトの日本研修とケニア及びマレーシアでの第三国研修を、ザンビア教育省の人材育成計画に位置づけて計画したことにより、研修効果が大いに高まった。また、専門家がそれらの研修の計画準備に強く関わることにより、ニーズに強く適合した研修が実現した。

２）実施プロセスに関すること

・本プロジェクト独自の授業研究の特徴が、協力や共有を徳とするザンビアの教員に好意的に受け入れられた。授業研究の実施に際し、教員に、8 段階の手の込んだ工程や、時間のかかる共同作業を求めているが、8 段階の工程は時間を必要とし、運営が大変である。インタビューに応じたほぼすべての関係者が、どのステップもはずせないと言い、協働して学び合う要素が、以前の SPRINT の研修よりも大きいことを、授業研究の長所であることを指摘した。

（２）効果発現を阻害した要因の分析

１）計画に関すること

・ザンビア国の現職教員政策の下で、既存の枠組みの中で実施されたことが、逆に、技術協力プロジェクトとしての、期限や指標の明確化、目標の達成等への意識を弱めた面がある。

２）実施プロセスに関すること

・コアテクニカルチームは、これまで重要な役割を果たしてきたが、メンバーの専門性、勤務地、能力、役割分担の偏りなどにより、効率的な動きが取れないこともあった。ただし、今後、再編成が予定されている。

第４章　提言

以上の評価結果を踏まえ、中間レビューチームは、プロジェクト終了時までに行われるべき活動を以下のように提言する。特に、特に提言４－１については、本レビュー後、早急に着手すべきである。

４－１　プロジェクト・デザイン・マトリックス（PDM）の改訂

本プロジェクトはザンビア教育省のマスタープランの一部を支援する活動群であるが、一定期間内に所期の目的を達成することを求められる技術協力プロジェクトというスキームを適用している関係上、JICA 側にとってはプロジェクト期間終了までに何を達成すべきかが明確にされる必要がある。現行の PDM においては、成果１の指標を除き、プロジェクト目標をはじめ指標の多くについて、達成すべき数値が明確になっていない。したがって、必要な指標に関しては、達成すべき数値を確定すべきである。

また、先行 3 州と新規拡大 7 州とでは授業研究の進捗状況や質について、本プロジェクト開始時におけるベースラインにかなりの違いがみられる指標もあるため、それらについては先行 3 州と新規 7 州とを分け、別々の指標を設ける必要がある（到達点を明確にすべき指標及び達成すべき数値等の詳細については、付属資料２「ミニッツ」の Annex 17 を参照）。

さらに、一部の指標に関しては、収集すべきデータが明確でないもの、ベースラインデータを収集していないものがあるので、それらについては適切なデータを決め、終了時評価までにどのようなデータを収集すべきか早急に決める必要性がある（改定すべき指標及び改訂例については、付属資料２「ミニッツ」の Annex 17 を参照）。

４－２　質的側面に関する一層の努力の必要性

（１）「良い（質の高い）授業研究」の要素の特定

本プロジェクトは、7 州に対する授業研究の新規拡大という量的な拡大をめざす活動（成果１）と、長期的な授業研究の質の向上のために必要なリソース人材の育成・強化及び参考資料の開発という質の改善をめざす活動（成果２及び成果３）とから成る。

まずは、授業研究が継続的に実施されるためには、授業研究を実施することにより参加教員が質的に向上できたという満足感を感じ続けられることが不可欠であり、そのためには、参加教員にとって毎回新たな学びがあるような授業研究であることが必要である。

したがって、参加教員にとって学びが多い授業研究となるために、授業研究がどのような要素を満たす必要があるのかを検討し、それらの要素を付属資料２「ミニッツ」の Annex 4 にある授業研究プロセスのチェックリストに含め、それらの要素をモニタリングする必要がある。

したがって、持続性の確保のためにも、成果１の指標に、「授業研究の質」として求められる要素を含めることを提言する。

（２）「主体的学習（Subjective Learning）」の導入促進

本プロジェクトでは、学習者中心の授業を実現する手段として「主体的学習（Subjective

Learning)」という概念を導入している[5]。この概念を定義し、重要な要素を特定し、プロジェクト終了時までに達成すべき目標値を設定する必要がある。

ステークホルダーズ・ワークショップやファシリテーターズ・ワークショップなどの既存の機会を活用し、学習者の「主体的学習」を強化する方法を早急に広めていく必要がある。その際、学習者の「主体的学習」を促進するような授業を、実際に教員が見る機会を設けることが望ましい。

（3）「教材研究」の導入促進

授業研究の質を高めるための方法として、本プロジェクトでは「教材研究」の導入を図っている。「教材研究」は、効果的な授業を実施するために授業の計画段階において行われるものである。特に、授業において学習者の「主体的学習」を実現するためには、生徒の現状や教材について十分に調べるなど、授業の計画段階で十分な教材研究が行われることが不可欠である。したがって、校内授業研究の普及を図ってきたザンビアにおいて、授業研究の質を深めるために教材研究を普及・強化することは、次なるステップとして適切である。

本フェーズでは教材研究に精通した人材を育成するために、本邦研修を活用し主要人材（「教材研究チーム」）の能力強化を図っているが、本プロジェクトの終了時までに、どの程度の能力強化が行われるべきかを明確にし、強化された能力をある程度具体的な成果として把握することが必要である。

さらに、教材研究の導入・普及のために、「教材研究チーム」がどのように質的側面に関わっていくのかを含め、教材研究の普及方法に関する方略（活動）を明確にし、プロジェクト終了時までに達成すべき成果を明確にすることを提言する。例えば、成果として、本邦研修の機会や教材を活用し、ザンビアの教員の教材研究に対する理解が促進されるような資料を開発し、教材研究に特化した小冊子を開発することを検討されたい。

（4）「良い授業」及び「良い授業研究」の発掘と開発

「授業研究」や「主体的学習」など、新しい概念や新しい実践を導入するには、単に説明するだけでは十分ではなく、実践例を見せることが効果的である。したがって、報告書やモニタリングの機会を活用し、「生徒が主体的に学習しているような授業」や「教員にとって学びの多い授業研究」を発掘し、他の教員がそれらの実践例を実際に見て、体験する場を設けることが重要である。

また、そのような優良実践例を発掘するだけではなく、模範となるような授業や授業研究の実践例を積極的に開発することにも着手されたい。例えば、いくつかの学校を「モデル校」として選定し、教材研究チーム（メンバー）を集中的に関与させ、授業や授業研究に関する先駆的な事例を開発するなどが考えられるであろう。

４－３　コアテクニカルチームの強化

コアテクニカルチームや教材研究チームは、授業研究の拡大、強化、改善のために極めて重要である。他方で、その重要性や能力の高さゆえ、コアテクニカルチームや教材研究メンバーが業

[5] 学習者中心の授業を意味する用語として「アクティブ・ラーニング」があるが、単なるグループワークではなく、学習者一人ひとりが主体的に学ぶことが重要との考えからこの「主体的学習」という用語をプロジェクトでは使用しているとのこと。

務を抱えすぎ、それによる活動の遅れがみられた。

授業研究の質的側面の強化に対する関与を強めていくためには、コアテクニカルチームと教材研究チームを、まずは量的に強化する（人数を増やす）必要がある。そうすることにより、コアチームメンバー及び教材研究チームが、運営面、教科面それぞれの領域に特化した活動ができるようにすることが必要である。

４－４　プロジェクト終了後の自立発展的仕組みづくりへの着手

本プロジェクトのこれまでの約 2 年間は、授業研究を新規 7 州に拡大することが活動の中心となっていた。後半の残り 2 年間は、プロジェクト終了後を見据え、日本人専門家チームがいなくなった後に、授業研究を維持し、その質を向上させるための方法及び体制づくりに着手する必要がある。

例えば、プロジェクト終了後の、教材研究チームの体制（どのように維持されるのか)、優良事例発掘のための報告書を活用するための仕組み、定期的にスキルブックを改訂・開発するための予算及び体制、ジャーナルを継続的に出版し続ける体制などについて検討を始めることが必要であろう。

付　属　資　料

１．調査日程表

２．ミニッツ（PDM 及び評価グリッド含む）

３．プロジェクト目標及び上位目標の指標詳細分析結果

４．中間レビュー結果を踏まえて、PDM 改訂のため署名されたミニッツ

１．調査日程表

No	Date		Evaluation Analysis (Mr.Miyakawa)	Leader (Mr.Matachi)/Cooperation Planning (Mr.Shibuya)
1	2/22	Sat	Leave Japan	
2	2/23	Sun	Arrivial in Lusaka	
3	2/24	Mon	Meeting with JICA office (with Japanese experts)	
4	2/25	Tue	Interview with Provincial Education Office (Central region),Provincial Teacher Resource Center	
5	2/26	Wed	Interview with District Education Office (Kabwe), head teacher in a secondary school, and teachers in primary schools in the Central Province and KK science team member in North Western Province	
6	2/27	Thu	Observe Lesson study at Ndola (Copperbelt Province) and interview with stakeholders	
7	2/28	Fri	Move to Lusaka	
8	3/1	Sat	Drafting Evaluation Grid	
9	3/2	Sun	Drafting Evaluation Grid	Leave Japan
10	3/3	Mon	Evaluation Team Meeting	Arrival in Lusaka/Evaluation Team Meeting
11	3/4	Tue	Meeting with JICA office/Meeting with STEPS Japanese experts	
12	3/5	Wed	Courtesy call and interview with PEO, Lusaka Province/Observe lesson study in Lusaka Secondary School/Interview with headteacher, teachers/Interview with DEST members	
13	3/6	Thu	Courtesy call and interview with DEBS, Mumbwa, Central Province/Observe lesson study in Bulungu Basic/Primary School/Interview with headteacher, teachers/Interview with DEST members	
14	3/7	Fri	Discussion of Draft evaluation grid with In-Service Unit, TESS	
15	3/8	Sat	Drafting MM	
16	3/9	Sun	Drafting MM/Discussion with STEPS Japanese expertss	
17	3/10	Mon	Discussion of MM with In-Service Unit, TESS and necessary modification	
18	3/11	Tue	NEST Administrative Commiittee/Signing of MM	
19	3/12	Wed	Leave Lusaka	PM Meeting with Japanese stakeholders about PRESET project
20	3/13	Thu	Arrival in Japan	Discussion with Pre-Service Unit, TESS regarding PRESET project/Report to JICA office
21	3/14	Fri		Reort to Japan Embassy/Leave Lusaka
22	3/15	Sat		On the way to Japan
22	3/16	Sun		Arrival in Japan

MINUTES OF MEETING
BETWEEN
JAPANESE MID-TERM REVIEW TEAM
AND
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE REPUBLIC OF ZAMBIA
ON
JAPANESE TECHNICAL COOPERATION
FOR
STRENGTHENING TEACHERS' PERFORMANCE AND SKILLS
THROUGH
SCHOOL-BASED CONTINUING PROFESSIONAL DEVELOPMENT PROJECT (STEPS)

The Mid-term Review Team (hereinafter referred to as "the Team"), organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr.Atsushi Matachi, visited the Republic of Zambia (hereinafter referred to as "Zambia") from 24 February to 11 March 2014 in order to conduct the Mid-term review of the Strengthening Teachers' Performance and Skills through School-Based Continuing Professional Development (STEPS) Project (hereinafter referred to as "the Project").

During its stay in Zambia, the Team exchanged views on the progress of the Project with the Zambian authorities concerned (hereinafter referred to as "the Zambian side") through a series of discussions.

As a result of the discussions, both the Zambian side and the Team agreed upon the matters referred in the document attached hereto.

Lusaka, 11 March 2014

Chishimba Nkosha (Mr.)
Permanent Secretary
(Education)
Ministry of Education, Science, Vocational Training and Early Education
The Republic of Zambia

Atsushi Matachi (Mr)
Leader
Mid-term Review Team
Japan International Cooperation Agency

Japan

ABBREVIATIONS

CPD	Continuing Professional Development
DEST	District Education Support Team
DESO	District Education Standards Officer
TESS	Teacher Education and Specialised Services
INSET	In-Service Training
JICA	Japan International Cooperation Agency
KK	Kyouzai-Kenkyu
MESVTEE	Ministry of Education, Science, Vocational Training and Early Education
NEST	National Education Support Team
NIF	National Implementation Framework
PDM	Project Design Matrix
PEO	Provincial Education Officer
PESO	Provincial Education Standards Officer
PEST	Provincial Education Support Team
PO	Plan of Operation
SBCPD	School-Based Continuing Professional Development
SESO	Senior Education Standards Officer
SIC	School In-Service Coordinator
SMASTE	Strengthening of Mathematics, Science, and Technology Education
SNDP	Sixth National Development Plan
SPRINT	School Program of In-service for the Term
STEPS	Strengthening Teachers' Performance and Skills through School Based Continuing Professional Development
ZIC	Zone In-service Coordinator

ANNEX

Annex1	Evaluation Grid
Annex2	Baseline Survey Instrument for Teachers
Annex3	Baseline Survey Instrument for pupils
Annex4	Monitoring Format on Facilitation of Lesson Study Activities
Annex5	Project Design Matrix
Annex6	Plan of Operation (with achievement)
Annex7	List of Core Counterpart
Annex8	Financial Input from Zambian Government
Annex9	Building and Other Facilities Provided by Zambian Government
Annex10	List of Japanese Expert/Curriculum Support Mission/Third Country Expert/Local consultant
Annex11	Plan for Capacity Development of Resource Personnel under STEPS Project (with Achievement during 2012-1014)
Annex12	Participants for Counterpart Training in Japan
Annex13	Participants for Third Country Training
Annex14	Technical Exchange Program in Other Countries
Annex15	Participants of the 3rd SMASE WECSA International Technical WS in Zambia
Annex16	List of Machinery and Equipment Provided by JICA
Annex17	Recommended Modification of the Indicators

TABLE OF CONTENTS

CH

AA

1. Introduction

1-1. Background and Purpose of the Review

The purpose of this mission is to review the progress of project activities and assess the project achievement after two years and four months since the commencement in November 2011. The project is scheduled to be terminated in December 2015.

The objectives of the Mid-Term Review are:

(1) To review the implementation of activities under the Project according to Project Design Matrix (PDM) and Plan of Operation (PO);

(2) To have common understanding on the progress of the activities and issues related to project implementation among the members both in Zambian and Japanese parties; and

(3) To have a common vision for achieving targets of the Project and future cooperation between Zambian and Japanese parties.

1-2.Period of the Evaluation

The Mid-term Review was conducted from February 24 to March 11, 2014 in Lusaka.

1-3. Major Members concerned with the Review

Zambian party:

Ministry of Education, Science, Vocational Training and Early Education

Chishimba Nkosha (Mr.)	Permanent Secretary (Education)
Muyangwa Kamutumwa (Mr.)	Director – TESS (Teacher Education and Specialized Service)
Esvah Chizambe (Ms.)	Chief Edcuation Officer - Teacher Education
Mercy Mwiya (Ms.)	Principal Education Officer, INSET - Teacher Education
Benson Banda (Mr.)	Principal Education Officer, National Science Center
Allan Lingambe (Mr.)	Principal Education Standards Officer, Northwestern Province
Charles A. Chisanga (Mr.)	Senior Education Officer - Secondary Schools
Bessie Tembo (Ms.)	Senior Education Officer - Teacher Resource Centers
Chilufuya Mumba (Ms.)	Senior Education Standards Officer - Science & Math., Headquaters

Japanese party:

Mid-term Review Team

Atsushi Matachi (Mr.)	Team Leader Senior Advisor (Education), JICA
Kazuro Shibuya (Mr.)	Team Member (Cooperation Planning), Deputy Director, Basic Education Division II, Basic

	Education Group, Human Development Department, JICA
Shimboku Miyakawa (Mr.)	Team Member (Evaluation Analysis), Consultant, Miyakawa LLC
JICA Zambia Office	
Yoshihide Teranishi (Mr.)	Resident Representative
Taigo Sasaki (Mr.)	Assistant Resident Representative
STEPS Project	
Kazuyoshi Nakai (Mr.)	Chief Advisor/ Management of Lesson Study (Science Education)
Shuhei Saikawa (Mr.)	Coordination and Monitoring of Lesson Study Activities
Shiori Abe (Ms.)	Management of Lesson Study (Mathematics Education)
Edward Tindi (Mr.)	Technical Adviser on Management of School-based CPD, STEPS Project

1-4.Methodology of Evaluation

The evaluation is designed to verify the following aspects based on the PDM and Plan of Operations (PO):

1) Achievement of the Project based on the PDM indicators
2) Implementation Process
3) Five Evaluation Criteria of DAC (Development Assistance Committee), OECD

Table 1: Definitions of the Five Criteria

Relevance	Relevance of the Project is reviewed in terms of the validity of the Project purpose and the Overall goal in connection with the development policy of the Government of Burkina Faso, aid policy of the Government of Japan, needs of beneficiaries, and by logical consistency of the Project plan.
Effectiveness	Effectiveness of the Project is assessed by evaluating the extent to which the Project had achieved its purpose and outputs.
Efficiency	Efficiency of the Project is analyzed to what extent to which the outputs are yielded in terms of quality, quantity, and timing of the inputs.
Impact	Impact of the Project is assessed on the basis of both positive and negative influences caused by the Project.
Sustainability	Sustainability of the Project is assessed in terms of policy, institutional, financial and technical aspects by examining the extent to which the achievements of the Project would be sustained or extended after the Project period.

Conclusions are drawn from the results of the mid-term review and recommendations are made by both sides.

2. Review

2-1. Achievements of the Project

2-1-1. Inputs

Both Zambian and Japanese sides have contributed to providing sufficient inputs for the smooth implementation of the Project. The Team did not observe any serious delay in terms of the timing of inputs.

2-1-1-1.Zambian Side

The original PDM indicates that Zambian side would provide the following inputs:

- ✓ Human resources (i: NEST, National Core Technical Team, PEST and DEST members in all 10 provinces, ii: College/University lectures, iii: NSC staff, iv: trained resource persons (facilitators and stakeholders) through SMASTE Phase I and II)
- ✓ Materials (i: Office and other buildings used for activity under the project, ii: Office Equipment, iii: Vehicles and Fuels, iv: Teaching and Learning materials used for Lesson Study)
- ✓ Finance (i: Funds for implementation of the Lesson Study activities, including Stakeholders and Facilitators Workshops, ii: Allowances for travel of local staff for project activities)

The table below shows the actual inputs from Zambian side. For further details of each input, see ANNEX7,8,and 9 . It is noticeable that Zambian side has borne the major costs used for the activities conducted at provincial, districts, zone levels, such as fuel and travel allowances for monitoring, and consumables used in workshops.

Inputs from Zambian Side

Item	Actual Input
Human resources	
i: NEST, National Core Technical Team, PEST and DEST members in all 10 provinces ii: College/University lectures, iii: NSC staff iii: trained resource persons (facilitators and stakeholders) through SMASTE Phase I and II)	31 personnel have worked for the project at the national level (NEST and Core Technical team). PEST and DEST members in 10 provinces have also worked for the Project. (ANNEX7) Those trained through SMASTE Phase I and II have been working for the project.
Materials	
i: Office and other buildings used for activity under the project	Inputs have been available as planned. (ANNEX9)

ii: Office Equipment iii: Vehicles and Fuels iv: Teaching and Learning materials used for Lesson Study)	
Finance	
i: Funds for implementation of the Lesson Study activities, including Stakeholders and Facilitators Workshops ii: Allowances for travel of local staff for project activities	34,418,000 ZMW (JPY 615,901,053) have been allocated by Zambian side for the Project activity at the national, provincial and district level including stakeholders and facilitators workshop. (ANNEX8)

2-1-1-2. Japanese Side

The original PDM indicates that Japanese side would provide the following inputs:

- ✓ Three long-term experts/short-term experts/ third-country experts/local consultant
- ✓ Training opportunities for education managers and teachers
- ✓ Equipment and materials
- ✓ Local costs for experts' activities and local expertise when necessary

The table below shows the actual inputs from Japanese side. For further details of each input, see ANNEX10-16.

Inputs from Japanese Side

Item	Actual Input
Long-tem/Short-tem/Third-Country Experts	Four long-term experts and two short-term experts from Japan as well as two Third-Country experts from Malaysia, have been dispatched. One local consultant has been assigned to the Project. In addition, four members of the mission for Curriculum Revision in Mathematics & Science have been dispatched. (ANNEX10)
Training	56 personnel have been trained in Japan so far (Core Technical Team and National level Facilitator: 24, Stakeholders: 16, Facilitators: 6). 72 personnel have been trained in Malaysia so far (Facilitators: 72). 7 personnel have been trained

	in Kenya (Facilitators: 7). (ANNEX11,12)
Equipment and materials	Equipment of the value of around 2 million ZMW, including vehicles, laptop computer, and video camera, have been provided. (ANNEX16)
Local costs for experts' activities and local expertise when necessary	Local costs for printing reference books, travels, fuels, maintenance, salary for the local staff, and other experts' activities have been borne by JICA. The total is 1,967,300ZMW (1,305,000 ZMW for general expense, 662,300 ZMW for travel cost, 265,890ZMW for printing reference books).

2-1-2. Outputs

Output 1: SBCPD is strengthened through Lesson Study
Output 2: Capacity of resource persons for implementing SBCPD is enhanced.
Output 3: Reference materials for implementing SBCPD are developed.

Output 1:

The following indicators were set to verify the achievement of the Output 1:

i. % of schools implementing lesson study (target figure: 70% in all target grades)

ii. Quality of lesson study verified by prepared check list

i) Achievement regarding the indicator 1-i

The numbers and the percentages of the school implementing lesson study are shown below.

Province	Mentor Provinces			New Provinces							Total Mentor	Total new	Total
	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern			
A	589	482	412	54	128	77	36	101	56	212	1,483	664	2,147
B	614	585	515	166	225	295	240	284	134	452	1,714	3,510	3,510
C(%)	95.9	82.4	80.0	32.5	56.9	26.1	15.0	35.6	41.8	46.9	86.5	37.0	61.1

A: Number of the school implementing lesson study
B: Number of the school offering any of G1-12 for the mentor provinces and G8-12 for the new provinces.
C: A/B (%)
Note: Numbers and percentage of schools implementing lesson study among GRZ & Grant aided schools as of Dec. 2013.
65 districts out of all 89 districts in the country are involved in the Project activities, as of Sep. 2012
Source: STEPS Project

All the three mentor provinces have achieved the target figure (70%), while none of the new seven provinces has reached 70%. The total number of the schools implementing lesson study has expanded to 2,147 school, which amounts to 61.1% of the 3,510 target schools as of January 2014. Muchinga province was newly established in October 2011 in the process of decentralization arrangement. This situation could be considered as a reason for its low implementation rate.

As for the teachers, 38,409 out of 58,236 teachers of all the target districts have participated in lesson study of the Project. This means that 66% of teachers have conducted lesson study.

ii) Achievement in terms of the indicator 1-ii

Data on quality of lesson study were collected in January and February, 2014, using Monitoring Format on Facilitation of Lesson Study Activities (Annex 4). Data were rated with a 0-2 scale. The eight steps to be observed are as follows:

Step I: Defining problems of challenge
Step II: Collaborate planning the lesson
Step III: Implementing demonstration lesson
Step IV: Discuss lesson & reflect on its effect
Step V: Revise the lesson
Step VI: Teach the revised lesson
Step VII: Discuss the lesson & reflect again
Step VIII: Reflection compiled & shared

The results are shown below. Because of insufficient number of data, it is not possible to generalize the progress made toward the Output1 at either the district or provincial level. Nevertheless, the available data from five provinces out of ten and findings are shown for reference.

There is a tendency that the scores for the second demonstration lesson (Step VI) are higher than the first demonstration lesson (Step III). The score of the last step (Step VIII), which looks at recording the discussion and the other activities is lower than other.

Province	Central	North Western	Copper belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG
Sample No.	NA	3	9	NA	NA	NA	2	7	6	NA
8 steps	NA			NA	NA	NA				NA
I	NA	2.00	1.98	NA	NA	NA	2.00	2.00	2.00	NA
II	NA	1.96	1.96	NA	NA	NA	2.00	1.71	1.67	NA
III	NA	1.83	1.90	NA	NA	NA	1.88	1.83	1.55	NA
IV	NA	2.00	1.99	NA	NA	NA	2.00	1.83	1.93	NA
V	NA	2.00	1.83	NA	NA	NA	1.75	1.58	2.00	NA
VI	NA	2.00	2.00	NA	NA	NA	2.00	1.75	1.56	NA
VII	NA	2.00	2.00	NA	NA	NA	2.00	1.85	1.81	NA
VIII	NA	1.71	1.98	NA	NA	NA	0.71	1.88	1.43	NA

( ): Sample number, LG*: Livingstone
Source: STEPS Project

Output 2:

The following indicators were set to verify the achievement of the Output 2:

i. Number of resource persons trained in lesson study

ii. Self-evaluation of resource persons on their performances

iii. Evaluation toward resource persons by beneficiaries

i) Achievement regarding the indicator 2-i

Training for the resource persons was planned in three categories. They are 'Core Technical Team and National level Facilitators', 'Stakeholders' and 'Facilitators'. The training was planned up to the final year of the Project and has been achieved almost as planned.

Table Achievement of the training for the resource persons

Category	Place	No. of Participants	
		Plan (2012-2013)	Achievement (2012-2013)
Core Technical Team and National level Facilitator	Japan	20	24
Stakeholders	Japan	23	16
	Zambia	1600	2749
Facilitator	Kenya	12	7
	Japan	12	16
	Malaysia	80	72
	Zambia	370	323
Total		2,117	3207

Source: STEPS Project

ii) Achievement regarding the indicator 2-ii

Most of the interviewed resource persons who were trained in Japan or who attended the workshops where Japanese short-term experts showed their demo lessons, expressed that observation of good examples of student-centered lessons and other good educational practices were very meaningful for their capacity development. Most of the stakeholders and facilitators interviewed in Central province and Copper-belt province were aware of their professional growth through the training received and the workshops they organized.

There have been opportunities at the district and provincial levels where resource persons can share the outcomes of the training with other teachers and officers. After coming back from the training courses abroad, they are asked to report and share what they learned at several occasions such as facilitator workshops and subject association meetings.

iii) Achievement regarding the indicator 2-iii

Data for this indicator has not been collected. However, several positive aspects about the resource persons' performance were mentioned during the mid-term review. For example, those who received training in Malaysia share their learning experience on subjective learning at facilitator workshops.

The Project formulated a Plan for Capacity Development of Resource Personnel under STEPS Project (ANNEX11). Several JICA's training courses are strategically utilized based on this plan. Appropriate personnel for each target group in this plan are sent to JICA's training and the outcome of the training has been fully utilized in the Project activities in Zambia.

Output 3:

The following indicators were set to verify the achievement of the Output 3:

i. Availability of developed reference materials in schools (Skills books, Journals, Guidelines etc.)

ii. User's (teachers') evaluation on the developed reference materials

i) Achievement regarding the indicator 3-i

Teaching Skills Book was revised to be a second edition and 15,000 copies are currently under printing. Management skills book and Implementation guidelines have not been revised yet and are going to be revised during the project period. 'Zambia Journal of Teacher Professional Growth, Volume 1, Number 1' was published and 3,000 copies were printed. The second volume is currently under printing.

3,000 copies of Lesson Study Implementation Guideline 4th Edition was additionally copied and distributed to the Provinces. Remaining copies of Teaching Skills Books and Management Skills Books for SMASTE II Project were also distributed to the Provinces.

ii) Achievement regarding the indicator 3-ii

Data has not been collected. However, education officers (PEST and DEST) and head teachers interviewed in Central Province and Copper-belt Province appreciated that the reference books that the Project has developed were very useful for implementing lesson study. In addition, the STEPS brochure is considered to be useful to understand the project

activities.

2-1-3. Project Purpose

Project purpose: Teaching skills are enhanced under School-based Continuous Professional Development

The following indicators were set to verify the achievement of the Project Purpose.

i. Result of lesson observation (Science and Mathematics) (demonstration of teaching skills)

ii. Self-evaluation of teachers in teaching skills

iii. Student' evaluation towards teaching

i) Achievement regarding the indicator i

Teachers' teaching skills in mathematics and science lessons from nine provinces were collected in January and February, 2014, using the baseline survey instrument (Part A and B (ANNEX2)).

One district from each province was selected for this data collection. Data were rated with a 0-4 scale and compared with those of the baseline survey. The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the Project Purpose at both the district and the provincial level. Nevertheless, the available data from eight provinces and findings are shown for reference.

Teachers' teaching skills for lesson planning in mathematics improved in five provinces and did not improve in the other four provinces. Likewise, in science it improved in seven provinces, fell in one province and another one showed no change.

Teachers' teaching skills for lesson delivering in mathematics improved in five provinces and did not improve in the other three provinces. Likewise, in science it improved in seven provinces and did not in one province.

Rating for Teachers' Teaching Skills for Lesson Planning, Mathematics

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchina	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	3.46(11)	3.04(8)	2.21(12)	2.69(5)	3.25(5)	3.13(4)	2.08(6)	2.50(5)	3.31(4)	2.33(5)	2.71** (379)
Mid-term	2.67(5)	3.25(3)	3.50(5)	2.50(3)	4.00(3)	NA	3.38(3)	1.67(4)	2.25(2)	2.88(3)	2.91 (31)
Difference	-0.79	0.21	1.29	-0.19	0.75	NA	1.30	-0.83	-1.06	0.55	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Teachers' Teaching Skills for Lesson Planning, Science

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.75(11)	1.94(9)	2.85(12)	2.58(5)	1.50(5)	3.25(5)	2.46(4)	1.50(5)	3.25(4)	2.58(5)	2.62** (172)
Mid-term	3.00(6)	2.42(6)	3.75(3)	3.00(2)	1.50(3)	NA	3.50(2)	3.00(3)	4.00(2)	1.50(2)	2.80 (29)
Difference	0.25	0.48	0.90	0.42	0.00	NA	1.04	1.50	0.75	-1.08	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Teachers' Teaching Skills for Lesson Delivering, Mathematics.

Province	Central	North Western	Copper-Belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.31(11)	1.84(8)	1.94(12)	1.50(5)	2.67(5)	2.06(4)	1.36(6)	1.42(5)	1.63(4)	2.33(5)	1.89** (379)
Mid-term	0.25(5)	2.33(3)	2.17(5)	1.75(3)	3.00(3)	NA	2.25(3)	2.00(4)	0.50(2)	1.75(3)	1.75 (31)
Difference	-2.06	0.49	0.23	0.25	0.33	NA	0.89	0.58	-1.13	-0.58	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Teachers' Teaching Skills for Lesson Delivering, Science

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.96(11)	1.31(9)	2.15(12)	0.79(5)	1.92(5)	2.36(5)	1.65(4)	0.75(5)	2.29(4)	2.33(5)	1.80** (172)
Mid-term	2.25(6)	1.75(6)	3.00(3)	3.50(2)	1.50(3)	NA	2.50(2)	2.33(3)	3.00(2)	1.50(2)	2.26 (29)
Difference	0.29	0.44	0.85	2.71	-0.42	NA	0.85	1.58	0.71	-0.83	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

ii) Achievement regarding the indicator ii

Data for this indicator has not been collected. However, PEST and DEST members have observed that teachers in general have improved their lesson planning in a collaborative manner and learned teaching skills of the others through lesson observation and discussion followed.

iii) Achievement regarding the indicator iii

Data on students' evaluation towards their teachers' teaching was collected in January and February, 2014, using the baseline survey instrument for pupils (Annex 2). One district from each province was selected for this data collection. Data were rated with a 0-2 scale and compared with those of the baseline survey. The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the Project Purpose at both the district and the provincial level. Nevertheless, the available data from six provinces and findings are shown for reference.

Extent of Attainment improved in four provinces and did not in two provinces.

Rating for Extent of Attainment (Question 1 – 6)

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.57 (220)	1.48 (170)	1.41 (240)	1.40 (100)	1.33 (100)	1.64 (100)	1.58 (100)	1.48 (100)	1.54 (80)	1.40 (100)	1.49** (7580)
Mid-term	NA	1.60(14)	1.67(8)	NA	1.67(6)	NA	1.57(10)	1.57(81)	1.53(10)	NA	1.58 (129)
Difference	NA	0.12	0.26	NA	0.34	NA	-0.01	0.09	-0.01	NA	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

2-1-4. Overall Goal

Overall Goal: Students learning process in science and mathematics is improved.

The following indicators were set to verify the achievement of the Overall Goal:

i. Result of lesson observation (Science and Mathematics) (student' activities)

ii. Students' perception toward their learning

i) Achievement regarding the indicator i

Data on students' learning in mathematics and science lessons in nine provinces were collected in January and February, 2014, using the baseline survey instrument (Part C in the ANNEX2). One district from each province was selected for this data collection. Data were rated with a 0-4 scale and compared with those of the baseline survey. The results are shown below. Because of insufficient number of data available, it is not possible to generalize the

progress made toward the overall goal at both the district and provincial level. Nevertheless, the available data from seven provinces and findings are shown for reference.
Students' learning (attainment aspect, mathematics) improved in six provinces and did not in two provinces. Likewise, in science score improved in eight provinces and did not in one province.

Students' learning (subjective learning, mathematics) improved in six provinces and did not in two provinces. Likewise, in science score improved in eight provinces and did not in one province.

Rating for Students' learning from the attainment aspect, Mathematics

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.23(11)	2.15(8)	2.04(12)	1.38(5)	2.08(5)	1.63(4)	1.72(6)	1.58(5)	1.81(4)	2.17(5)	1.92** (379)
Mid-term	0.67(5)	2.67(3)	2.33(5)	1.75(3)	3.00(3)	NA	2.17(3)	2.00(4)	NA	2.00(3)	1.99 (29)
Difference	-1.56	0.52	0.29	0.37	0.92	NA	0.45	0.42	NA	-0.17	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Students' learning from the attainment aspect, Science

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.79(11)	1.33(9)	2.25(12)	1.11(5)	1.42(5)	2.25(5)	1.71(4)	1.00(5)	2.10(4)	2.17(5)	1.77** (172)
Mid-term	2.25(6)	1.78(6)	2.50(3)	3.00(2)	1.50(3)	NA	2.50(2)	2.00(3)	3.00(2)	1.75(2)	2.16 (29)
Difference	0.46	0.45	0.25	1.89	0.08	NA	0.79	1.00	0.90	-0.42	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Students' learning from the subject learning aspect, Mathematics

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.23(11)	2.17(8)	1.83(12)	1.32(5)	1.83(5)	1.63(4)	1.17(6)	1.58(5)	1.69(4)	2.25(5)	1.81** (379)
Mid-term	0.25(5)	2.25(3)	2.50(5)	1.50(3)	3.00(3)	NA	2.06(3)	1.67(4)	NA	1.88(3)	1.81 (29)
Difference	-1.98	0.08	0.67	0.28	1.17	NA	0.89	0.09	NA	-0.37	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source; STEPS Project

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Rating for Students' learning from the subject learning aspect, Science

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.54(11)	1.06(9)	1.90(12)	1.11(5)	1.42(5)	2.25(5)	1.47(4)	1.00(5)	1.77(4)	2.17(5)	1.62** (172)
Mid-term	1.58(6)	1.29(6)	2.50(3)	3.00(2)	1.50(3)	NA	2.50(2)	2.33(3)	2.00(2)	1.50(2)	1.87 (29)
Difference	0.04	0.23	0.60	1.89	0.08	NA	1.03	1.33	0.23	-0.67	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

ii) Achievement regarding the indicator ii

Data on students' perception towards their learning in six provinces were collected in January and February, 2014, using the baseline survey instrument (Annex 2). One district from each province was selected for this data collection. Data were rated with a 0-2 scale and compared with those of the baseline survey. The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the overall goal at both the district and provincial level. Nevertheless, available data from 6 provinces out of ten and findings are shown for reference.

Quality of Learning improved in five provinces and no change in one province.

Operational ability improved in all the six provinces sampled.

Rating for Quality of Learning (Question 7-11)

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.65 (220)	1.51 (170)	1.52 (240)	1.51 (100)	1.54 (100)	1.75 (90)	1.64 (100)	1.51 (100)	1.60 (80)	1.51 (100)	1.58** (7580)
Mid-term	NA	1.60(14)	2.00(8)	NA	1.55(6)	NA	1.75(81)	1.58(10)	1.60 (10)	NA	1.72 (129)
Difference	NA	0.09	0.48	NA	0.01	NA	0.11	0.07	0.00	NA	

( ): Sample number, LG*: Livingstone **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Operational Ability (Question 12-18)

Province	Central	North Western	Copper-belt	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.58 (220)	1.45 (170)	1.36 (240)	1.27 (100)	1.30 (100)	1.61 (90)	1.59 (100)	1.33 (100)	1.51 (80)	1.48 (100)	1.46** (7580)
Mid-term	NA	1.54(14)	1.68(8)	NA	1.46 (6)	NA	1.60(81)	1.42(10)	1.54 (10)	NA	1.57 (129)
Difference	NA	0.09	0.32	NA	0.16	NA	0.01	0.09	0.03	NA	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

2-2. Implementation Process

2-2-1 Promoting factors

There are some factors that have contributed to the smooth implementation of the Project. The Project utilizes the existing framework of SPRINT, which enables the Project to use resources that are allocated to SPRINT including personnel, budget, facilities, and institutions for the Project. In addition, major components of lesson study, e.g., school based training, teacher group meeting, lesson demonstration and observation, discussion, reporting and recording, had been also conducted even before lesson study was introduced, which made it easier for lesson study to be accepted. Lesson study seems to be well suited to the Zambian national trait and culture where teachers are willing to share their experience and knowledge with other colleagues.

2-2-2 Hindering factors

The insufficient number of personnel the Core Technical Team seems to be a part of the causes for delays in some activities. Time-taking procedure for executing budget is an obstructing factor. The composition of the members of the Core Technical Team, namely, bringing together the members from various Provinces, has made it difficult for the Team to make prompt decisions In order to address this issue, re-structuring the Core Team members according to specialization has been discussed.

2-3. Evaluation by the Five Criteria

Results of the evaluation by the five criteria are summarized below.

Relevance: High
- This project is highly relevant with the policy objectives of the Government of Zambia. . - Education Policy document "Educating Our Future (1996)" stress the importance of the improvement of education and clearly articulated SBCPD as one of the effective measures to be taken. - Following this policy, one of the prioritized objectives of the Sixth National Development Plan (2011-2015) and the National Implementation Framework III (2011-2015) is to improve the quality of education at all levels, and more specifically, to improve students' learning achievement in science and mathematics. - Ministry of Education developed "the SBCPD Master Plan 2010-2023'. This shows the MOE's strong commitment to SBCPD. - The project is also relevant to Japan's aid policy for Zambia. Supporting the quality improvement of education is set as one of major areas of the policy. The STEPS Project

is well aligned with this policy as it has aimed at improving the quality of teaching and learning through lesson study.

- The lesson study approach well fits and vitalizes the existing SPRINT (School Programme of In-service for the Term) framework in the SBCPD policy in Zambia and highly appropriate in the context of Zambia.
- The selection of the target group was appropriate. In the mentor provinces, the target was expanded to lower grades (Grade 1 – 7), while for the other seven new provinces, only grade 8-12 teachers were targeted. This phase-in approach was proved as workable in the previous SMASTE Phase II.

Effectiveness: Difficult to judge but positive trends observed

- It is difficult to judge the effectiveness of the Project because data obtained to see the achievement toward the Project Purpose and the Outputs are not sufficient. The number of the sample was little for comparison with the baseline data.
- Followings were observed as the trends at the time of the Mid-term Review
  - Average scores of the teachers' teaching skills for lesson planning showed improvement in Mathematics and Science. Those for lesson delivery showed the improvement in Science only.
  - About the lesson study implementation, all the three mentor provinces have achieved the target (70 %), while none of the new seven provinces has reached the target.
  - Training for the resource persons has been implemented as planned
- Although clear targets of the objectively verifiable indicators are required to discuss the achievement of the Project Purpose, some of the indicators in the PDM lack the target figures.
- The Output 1 (strengthening SBCPD) is linked with the Project Purpose (Enhancing teaching skills) in means and ends relation clearly. However, while the percentage of schools implementing lesson study in three mentor provinces have reached (70%), that in seven new provinces is still under 50%. The contribution of the Output 1 to the Project Purpose seems high in the mentor three provinces but not so in the new provinces.
- The Project has trained considerable numbers of resourse persons (Core technical team, Stakeholders, Facilitators) under the Output 2. Those personnel have been contributing to the project purpose by engaging themselves in the nationwide expansion and implementation of lesson study..

Efficiency: Intermediate

- As it utilizes the existing framework of SPRINT, the Project did not have to build new structures including personnel, budget, facilities and institutions for the Project.

- Regarding Output 1, while the implementation rate of lesson study of the three mentor provinces have already reached the target (70%), the rate of the seven new provinces has not reached. Among the latter, three provinces show over 40% for their implementing rates and the others do lower. The new provinces needs more efforts or supports to reach the target figure in the given time period.
- Output 2 has been produced almost as planned. Training in Japan and the third countries for the resource persons have been provided. Those who have been trained shared their experience through stakeholders workshops and facilitators workshops. This has contributed to the efficiency of the Project.
- As for the Output 3, revisions of the Teaching Skills Book, the Management Skills Book and the Implementation Guidelines are behind the schedule due to the reasons that much effort was given to the revision of the teaching skills book and some of the core personnel were overloaded. Another reason was an underestimate of time taken and an ambitious planning for the work. Printing of the Teaching Skills Book has been just completed, though.
- Though the mentoring activities has not taken place as expected due to inadequate and erratic funding, the experience of the previous phases of the Project has been used for expansion to the new provinces through national level meetings and technical support visits of the National Core Team.
- Overload of the National Core Team and time-consuming administrative procedure to execute the budget caused delay in some activities at the national level.

Impact: Relatively High

- Students' learning process in the classroom is expected to be improved if teachers' teaching skills are enhanced and teachers continue applying the skills.
- However, the achievement of the Overall Goal heavily depends on the progress of the Project Purpose. As the degree of the achievement of the Project Purpose cannot be assessed at this stage, it is too early to judge the prospect of the overall goal.
- Through interviews, it was confirmed that in some province, lesson study would be expanding beyond the target districts and target grades of the Project.
- KK Team members were asked to contribute to curriculum development of science and mathematics and textbooks development in mathematics (Grade1), which can be considered as spill-over effect of the Project,
- Zambia received study visits on lesson study from Namibia, Burundi, Malawi and Senegal. The experience of lesson study was shared with educators of those countries.

Sustainability : Relatively High

- Quality, as well as access and equity, has been emphasized in the national policy and the promotion of CPD has been regarded as a key strategy. This trend will continue as no

needs for change is considered.

- The budget for continuing lesson study is likely to be secured within the framework of SPRINT.
- It is not clear whether some of the budget borne by the Japanese side such as costs for printing Management and Teaching Skills Books will be secured at this stage.
- In Zambia, competent resource persons such as Kyozai Kenkyu team members of the Project are available in the provinces. Under the framework of the SPRINT, which covers all over the country, even after the Project period, the Zambian side will be able to utilize those competent resource persons for activities both at the province levels and national levels.
- A sufficient number of resource persons in the aspect of technical matters have been trained. It is critical how these resource persons will be utilized during and beyond the Project period. It is too early to judge this matter at this moment.
- The teaching skills book, the management skills book and the implementation guideline are useful for maintaining the quality level of lesson study.
- The future plan regarding how the journal (ZJTPG) will be maintained in terms of technical aspects, including technical capacity of editors, is not clear at this stage.

2-4. Conclusion

As a whole, the Project has made good progress so far, while the Project had to spend most of time for expanding lesson study in seven new provinces. This caused the delay in Project activities for enhancing the quality of lesson study.

This Project is considered to have high relevance and sustainability. This project fits well and vitalizes the existing SPRINT (School Programme of In-service for the Term) framework in the SBCPD policy in Zambia. In addition, this Project has enhanced the capacity of resource persons at the national, provincial, district and school levels through the training in Japan, Malaysia and Kenya. Those resource persons have shared their experience through facilitators workshops in the Project. It contributes to the sustainability of the Project as such resource persons are available not only at the national level but also at the provincial and district level in order to help lesson study in schools.

In addition, unintended positive impacts have been observed through the Project activities. KK Team members were asked to contribute to curriculum development of science and mathematics and textbooks development in mathematics (Grade1), which can be considered as spill-over effect of the Project,

Although there are some positive trends observed, it is difficult to judge the effectiveness of the Project because data obtained to see the achievement toward the Project Purpose and the Outputs are not sufficient. The achievement of the Overall Goal heavily depends on the progress of the Project Purpose. As the degree of the achievement of the Project Purpose cannot be assessed at this stage, it is too early to judge the prospect of the overall goal.

To sustain the efficiency and ensure the sustainability of the Project, it is critical how trained resource persons can contribute to the quality aspect of lesson study.

3. Recommendations

Activities to be implemented by the end of the project period

Based on the review of the activities, the Mid-term Review Team has made the following recommendations. It is recommended that Recommendation 1 be implemented as soon as possible.

3.1 Revision of Project Design Matrix (PDM)

The Mid-Term Review Team is aware that the STEPS Project supports parts of MESVTEE's SBCPD Master Plan. Nevertheless, as this Project is a technical cooperation project that is supposed to achieve a specific project purpose within a designated timeframe, it is necessary for JICA to have time-bound objectives that must be achieved by the end of the Project period.

The current PDM, however, does not specify target figures for the objectively verifiable indicators including those for the Project purpose. Therefore, the Project should set target figures where necessary.

As the progress in expanding lesson study and its quality were different in the three mentor provinces and in the seven new provinces, the Team recommends that the target figures for the three mentor provinces and those for the seven new provinces be different (Refer to the ANNEX17 for the details of suggested modification of indicators and target figures).

3.2 Further efforts in improving the quality aspects

(1) Identifying elements/aspects of "good (quality)" lesson study

This Project consists of activities for expanding coverage of lesson study activities to the new seven provinces (Output 1) and those for improving the quality of lesson study such as developing the capacity of core personnel and developing reference materials (Output 2 and

Output 3).

In order for lesson study to be continued, the quality of lesson study is critical. Lesson study must provide participating teachers with opportunities to learn something new each time for improving their lesson delivery.

Hence, the Team suggests that the Project identify elements/aspects of "good (quality)" lesson study. Then, the elements/aspects should be included in the checklist for lesson study procedure and be monitored.

(2) Facilitating the introduction of Subjective Learning

This Project has introduced the concept of "Subjective Learning" as a means to realize a learner-centred lesson. It is necessary to define the concept, identify critical elements of subjective learning, and set the targets to be achieved by the end of the Project.

Methods which enhance subjective learning need to be introduced as soon as possible by utilizing existing opportunities such as Stakeholders' Workshops and Facilitators' Workshops. It is recommended to show actual lessons that facilitate subjective learning since showing actual examples is more effective than just explaining.

(3) Introduction of the concept of "Kyozai-Kenkyu"

The Project has introduced the concept of "Kyozai-Kenkyu" which is considered as a critical step for lesson planning. In order to foster subjective learning for learners, teachers must prepare a lesson by studying learners and learning materials carefully and meticulously. Therefore, introducing practices based on "Kyozai-Kenkyu" is an appropriate approach to improving the quality of Lesson Study.

This Project is investing a lot in developing the capacity of core personnel, namely, "Kyozai-Kenkyu Team (KK Team)"members and some Facilitators by providing them with opportunities to be trained in Japan and Malaysia. It is very critical to develop a strategy and a concrete plan as to how those developed capacities will be utilized to introduce and entrench "Kyozai-Kenkyu" practices in Zambia.

For instance, it is suggested that a booklet on "Kyozai-Kenkyu" be developed by utilizing what those core personnel (will) have learned in Japan and Malaysia so that the booklet can facilitate introducing the concept of "Kyozai-Kenkyu".

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(4) Identifying and developing good practices on lessons and lesson study

It is not easy to introduce new practices or new concepts such as lesson study and subjective learning just by explanation. As stated in 2. (2) above, it is more effective to show teachers actual examples. Hence, it is important to identify good examples of lessons and lesson study so that teachers can learn by visiting those actual examples/practices.

It is also important, not only to identify good practices on the ground, but also to develop good examples/practices by involving KK Teams actively and intensively. For example, it will be effective to develop some schools as "model schools" which can be "showcases" for teachers to see actual examples of "a good lesson" which fosters subjective learning as well as "a good lesson study" where participating teachers can learn a lot.

It is also suggested that the Journal (ZJTPG) collect not only academic papers but more papers on good practices so that practitioners including teachers on the ground can present their experience on the ground.

3. Strengthening the Core Technical Team

The Core Technical Team and the Kyozai-Kenkyu Teams are critical to expanding, entrenching and improving lesson study. As some of those core personnel shoulder too much tasks, some delays have been observed in the implementation of project activities.

The Team suggests that, considering the importance of the Teams, the Core Technical Team and KK Teams be strengthened in order to allow them to focus on their specialty, namely, management, mathematics and science.

4. Establishing a sustainable structure for the future

The Project has struggled with the expansion of lesson study to the seven new provinces in the first two years of the Project. It is high time to start thinking about the strategy as to how to entrench lesson study activities and how to continue improving the quality. For example, strategies need to be developed as to how KK Teams will be maintained, how the Management and Teaching Skills Book will be revised and improved, how the Journal will continue to be published, etc. after the end of the Project.

In addition, the importance of the education quality agenda is clearly stated in the Revised SNDP and NIFIII. Given the already demonstrated positive impact of SBCPD on quality, the NEST Administrative Committee strongly recommends that MESTVEE, through the Directorate of Planning & Information, prioritizes budgetary allocations to SBCPD through

Lesson Study activities at Provincial, District, and School levels.

Evaluation Grid for the Terminal Evaluation of the STEPS Project

1. Achievement of the Project

<table>
<tr><th colspan="2">Evaluation items</th><th>Findings</th></tr>
<tr><th>Main items</th><th>Sub-items</th><th></th></tr>
<tr><td>Progress made toward the Overall Goal</td><td>Is the students' learning process in science and mathematics improved?</td><td>[PDM Indicator 1]:Result of lesson observation (Science and Math) (students activities)

- Data on students' learning in mathematics and science lessons in nine provinces were collected in January and February, 2014, using the baseline survey instrument (Part C in the Annex 1). One district from each province was selected for this data collection. Datawere rated with a 0-4 scale and compared with those of the baseline survey. The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the overall goalat either the district or provincial level. Nevertheless, the available data from seven provinces and findings are shown for reference.
- Students'learning (attainment aspect, mathematics) improved in six provinces and did not in two provinces. Likewise in science score improved in eight provinces and did not in one province.
- Students'learning (subjective learning, mathematics) improved in six provinces and did not in two provinces. Likewise in science score improved in eight provinces and did not in one province.

Rating for Students'learning from the attainment aspect, Mathematics
<table><tr><td>Province</td><td>Central</td><td>North Western</td><td>Copper belt,</td><td>Northern</td><td>Eastern</td><td>Lusaka</td><td>Muchinga</td><td>Luapula</td><td>Western</td><td>Southern</td><td>National</td></tr><tr><td>District</td><td>Kabwe</td><td>Solwezi</td><td>Ndola</td><td>Kasama</td><td>Chipata</td><td>Lusaka</td><td>Mpika</td><td>Mansa</td><td>Mongu</td><td>LG*</td><td></td></tr><tr><td>Baseline</td><td>2.23(11)</td><td>2.15(8)</td><td>2.04(12)</td><td>1.38(5)</td><td>2.08(5)</td><td>1.63(4)</td><td>1.72(6)</td><td>1.58(5)</td><td>1.81(4)</td><td>2.17(5)</td><td>1.92** (379)</td></tr><tr><td>Mid-term</td><td>0.67(5)</td><td>2.67(3)</td><td>2.33(5)</td><td>1.75(3)</td><td>3.00(3)</td><td>NA</td><td>2.17(3)</td><td>2.00(4)</td><td>NA</td><td>2.00(3)</td><td>1.99 (29)</td></tr><tr><td>Difference</td><td>-1.56</td><td>0.52</td><td>0.29</td><td>0.37</td><td>0.92</td><td>NA</td><td>0.45</td><td>0.42</td><td>NA</td><td>-0.17</td><td></td></tr></table>( ): Sample number,LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project</td></tr>
</table>

Progress made toward the Overall Goal	Is the students' learning process in science and mathematics improved?	

Rating for Students' learning from the attainment aspect, Science

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.79(11)	1.33(9)	2.25(12)	1.11(5)	1.42(5)	2.25(5)	1.71(4)	1.00(5)	2.10(4)	2.17(5)	1.77** (172)
Mid-term	2.25(6)	1.78(6)	2.50(3)	3.00(2)	1.50(3)	NA	2.50(2)	2.00(3)	3.00(2)	1.75(2)	2.16(29)
Difference	0.46	0.45	0.25	1.89	0.08	NA	0.79	1.00	0.90	-0.42	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Students' learning from the subject learning aspect, Mathematics

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.23(11)	2.17(8)	1.83(12)	1.32(5)	1.83(5)	1.63(4)	1.17(6)	1.58(5)	1.69(4)	2.25(5)	1.81** (379)
Mid-term	0.25(5)	2.25(3)	2.50(5)	1.50(3)	3.00(3)	NA	2.06(3)	1.67(4)	NA	1.88(3)	1.81 (29)
Difference	-1.98	0.08	0.67	0.28	1.17	NA	0.89	0.09	NA	-0.37	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Students' learning from the subject learning aspect, Science

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.54(11)	1.06(9)	1.90(12)	1.11(5)	1.42(5)	2.25(5)	1.47(4)	1.00(5)	1.77(4)	2.17(5)	1.62** (172)
Mid-term	1.58(6)	1.29(6)	2.50(3)	3.00(2)	1.50(3)	NA	2.50(2)	2.33(3)	2.00(2)	1.50(2)	1.87(29)
Difference	0.04	0.23	0.60	1.89	0.08	NA	1.03	1.33	0.23	-0.67	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Progress made toward the Overall Goal	Is the students' learning process in science and mathematics improved?	[PDM Indicator 2]:Students' perception towards their learning - Data on students' perception towards their learning in sixprovinces were collected in January and February, 2014, using the baseline survey instrument (Annex 2). One district from each province was selected for this data collection. Data were ratedwith a 0-2 scale and compared with those of the baseline survey.The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the Overall Goal ateither the district or provincial level. Nevertheless, available data from 6 provinces out of ten and findings are shown for reference. - Quality of Learning improved in five provinces and no change in one province. - Operational ability improved in all the six provinces sampled.

Rating for Quality of Learning (Question 7-11)

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.65(220)	1.51(170)	1.52(240)	1.51(100)	1.54(100)	1.75(90)	1.64(100)	1.51 (100)	1.60 (80)	1.51 (100)	1.58** (7580)
Mid-term	NA	1.60(14)	2.00(8)	NA	1.55(6)	NA	1.75(81)	1.58(10)	1.60 (10)	NA	1.72 (129)
Difference	NA	0.09	0.48	NA	0.01	NA	0.11	0.07	0.00	NA	

( ): Sample number, LG*: Livingstone **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Operational Ability (Question 12-18)

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Lupula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.58(220)	1.45 (170)	1.36 (240)	1.27(100)	1.30 (100)	1.61(90)	1.59(100)	1.33 (100)	1.51 (80)	1.48 (100)	1.46** (7580)
Mid-term	NA	1.54(14)	1.68(8)	NA	1.46 (6)	NA	1.60(81)	1.42 (10)	1.54(10)	NA	1.57 (129)
Difference	NA	0.09	0.32	NA	0.16	NA	0.01	0.09	0.03	NA	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Progress made toward the Project Purpose	Are the teaching skills enhanced under School-based Continuous Professional Development?	[PDM Indicator 1]: Result of lesson observation (Science and Math) (Demonstration of teaching skills)

- Teachers' teaching skills in mathematics and science lessons from nine provinces were collected in January and February, 2014, using the baseline survey instrument (Part A and B (Annex 1)).
- One district from each province was selected for this data collection. Data were rated with a 0-4 scale and compared with those of the baseline survey. The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the Project Purpose at either the district or provincial level. Nevertheless, the available data from eight provinces and findings are shown for reference.
- Teachers' teaching skills for lesson planning in mathematics improved in five provinces and did not improve in four provinces. Likewise in science it improved in seven provinces, fellinone province and another one showed no change..
- Teachers' teaching skills for lesson delivering in mathematics improved in six provinces and did not improve in three provinces. Likewise in science it improved in seven provinces and did not in one province.

Rating for Teachers' Teaching Skills for Lesson Planning, Mathematics

Province	Central	North Western	Copper belt,	Northern	East ern	Lusaka	Muchin ga	Luapu la	Wester n	South ern	Natio nal
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	3.46(11)	3.04(8)	2.21(12)	2.69(5)	3.25(5)	3.13(4)	2.08(6)	2.50(5)	3.31(4)	2.33(5)	2.71** (379)
Mid-term	2.67(5)	3.25(3)	3.50(5)	2.50(3)	4.00(3)N A	NA	3.38(3)	1.67(4)	2.25(2)	2.88(3)	2.91 (31)
Difference	-0.79	0.21	1.29	-0.19	0.75	NA	1.30	-0.83	-1.06	0.55	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Teachers' Teaching Skills for Lesson Planning, Science

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchin ga	Luapu la	Weste rn	South ern	Natio nal
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.75(11)	1.94(9)	2.85(12)	2.58(5)	1.50(5)	3.25(5)	2.46(4)	1.50(5)	3.25(4)	2.58(5)	2.62** (172)
Mid-term	3.00(6)	2.42(6)	3.75(3)	3.00(2)	1.50(3)	NA	3.50(2)	3.00(3)	4.00(2)	1.50(2)	2.80 (29)
Difference	0.25	0.48	0.90	0.42	0.00	NA	1.04	1.50	0.75	-1.08	

Progress made toward the Project Purpose	Are the teaching skills enhanced under School-based Continuous Professional Development?	( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey Source: STEPS Project Rating for Teachers' Teaching Skills for Lesson Delivering, Mathematics.

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	2.31(11)	1.84(8)	1.94(12)	1.50(5)	2.67(5)	2.06(4)	1.36(6)	1.42(5)	1.63(4)	2.33(5)	1.89**(379)
Mid-term	0.25(5)	2.33(3)	2.17(5)	1.75(3)	3.00(3)	NA	2.25(3)	2.00(4)	0.50(2)	1.75(3)	1.75(31)
Difference	-2.06	0.49	0.23	0.25	0.33	NA	0.89	0.58	-1.13	-0.58	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

Rating for Teachers' Teaching Skills for Lesson Delivering, Science

Province	Central	North Western	Copper belt,	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	National
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG*	
Baseline	1.96(11)	1.31(9)	2.15(12)	0.79(5)	1.92(5)	2.36(5)	1.65(4)	0.75(5)	2.29(4)	2.33(5)	1.80**(172)
Mid-term	2.25(6)	1.75(6)	3.00(3)	3.50(2)	1.50(3)	NA	2.50(2)	2.33(3)	3.00(2)	1.50(2)	2.26(29)
Difference	0.29	0.44	0.85	2.71	-0.42	NA	0.85	1.58	0.71	-0.83	

( ): Sample number, LG*: Livingstone, **:Country average at the Baseline Survey
Source: STEPS Project

[PDM Indicator 2]: Result of self-evaluation of the teachers in teaching skills

- Data for this indicator has not been collected. However, PEST and DESTmembers have observed that teachers in general have improved their lesson planning in a collaborative manner and learned teaching skills of the others through lesson observation and discussion followed.

[PDM Indicator 3]: Result of students' evaluation towards teaching.

- Data on students' evaluation towards their teachers' teaching was collected in January and February, 2014, using the baseline survey instrument for pupils (Annex 2). One district from each province was selected for this data collection. Data were rated with a 0-2 scale and

<table>
<tr>
<td>Progress made toward the Project Purpose</td>
<td>Are the teaching skills enhanced under School-based Continuous Professional Development?</td>
<td>compared with those of the baseline survey.The results are shown below. Because of insufficient number of data available, it is not possible to generalize the progress made toward the Project Purpose at either the district or provincial level. Nevertheless, the available data from sixprovinces and findings are shown for reference.
- Extent of Attainment improved in four provinces and did not in two provinces.

Rating for Extent of Attainment (Question 1 – 6)
<table>
<tr><td>Province</td><td>Central</td><td>North Western</td><td>Copper belt,</td><td>Northern</td><td>Eastern</td><td>Lusaka</td><td>Muchinga</td><td>Luapula</td><td>Western</td><td>Southern</td><td>National</td></tr>
<tr><td>District</td><td>Kabwe</td><td>Solwezi</td><td>Ndola</td><td>Kasama</td><td>Chipata</td><td>Lusaka</td><td>Mpika</td><td>Mansa</td><td>Mongu</td><td>LG*</td><td></td></tr>
<tr><td>Baseline</td><td>1.57(220)</td><td>1.48(170)</td><td>1.41(240)</td><td>1.40(100)</td><td>1.33(100)</td><td>1.64(100)</td><td>1.58(100)</td><td>1.48(100)</td><td>1.54(80)</td><td>1.40(100)</td><td>1.49**(7580)</td></tr>
<tr><td>Mid-term</td><td>NA</td><td>1.60(14)</td><td>1.67(8)</td><td>NA</td><td>1.67(6)</td><td>NA</td><td>1.57(10)</td><td>1.57(81)</td><td>1.53(10)</td><td>NA</td><td>1.58(129)</td></tr>
<tr><td>Difference</td><td>NA</td><td>0.12</td><td>0.26</td><td>NA</td><td>0.34</td><td>NA</td><td>-0.01</td><td>0.09</td><td>-0.01</td><td>NA</td><td></td></tr>
</table>
( ): Sample number, LG*: Livingstone,**:Country average at the Baseline Survey
Source: STEPS Project</td>
</tr>
<tr>
<td>Progress made toward the Outputs</td>
<td>1. Is SBCPD strengthened through lesson study?</td>
<td>[PDM Indicator 1-1]: % of the schools implementing lesson study. (Target figure: 70% in target grades)

The numbers and the percentage of the school implementing lesson study are shown below.
<table>
<tr><td></td><td colspan="3">Mentor Provinces</td><td colspan="8">New Provinces</td><td>Total</td><td>Total</td><td>Total</td></tr>
<tr><td>Province</td><td>Central</td><td>North Western</td><td>Copper belt,</td><td>Northern</td><td>Eastern</td><td>Lusaka</td><td>Muchinga</td><td>Lupula</td><td>Western</td><td>Southern</td><td>Total Mentor</td><td>Total new</td><td></td></tr>
<tr><td>A</td><td>589</td><td>482</td><td>412</td><td>54</td><td>128</td><td>77</td><td>36</td><td>101</td><td>56</td><td>212</td><td>1,483</td><td>664</td><td>2,147</td></tr>
<tr><td>B</td><td>614</td><td>585</td><td>515</td><td>166</td><td>225</td><td>295</td><td>240</td><td>284</td><td>134</td><td>452</td><td>1,714</td><td>3,510</td><td>3,510</td></tr>
<tr><td>C(%)</td><td>95.9</td><td>82.4</td><td>80.0</td><td>32.5</td><td>56.9</td><td>26.1</td><td>15.0</td><td>35.6</td><td>41.8</td><td>46.9</td><td>86.5</td><td>37.0</td><td>61.1</td></tr>
</table>
A: Number of the school implementing lesson study
B: Number of the school offering any of G1-12 for the mentor provinces and G8-12 for the new</td>
</tr>
</table>

Progress made toward the Outputs	1. Is SBCPD strengthened through lesson study?	provinces. C: A/B (%) Note: Numbers and percentage of schools implementing lesson study among GRZ & Grant aided schools as of Dec. 2013. 65 districts out of all 89 districts in the country are involved in the Project activities, as of Sep. 2012 Source: STEPS Project - All the three mentor provinces have achieved the target figure (70%), while none of the new seven provinces has reached 70%. The total number of the school implementing lesson study has expanded to 2,147 schools, which amounts to 61.1% of the 3,510 target schools as of January 2014. Muchinga province was newly established in October 2011 in the process of decentralization arrangement. This situation could be considered as a reason for its low implementation rate. - As for the teachers, 38,409 out of 58,236 teachers of all the target districts have participated in lesson study of the Project. This means that 66% of teachers have conducted lesson study.
		[PDM Indicator 1-2]: Quality of lesson study verified by prepared checklists Data on quality of lesson study were collected in January and February, 2014, using Monitoring Format on Facilitation of lesson study Activities (Annex 3). Data were rated with a 0-2 scale. The eight steps to be observed are as follows: Step I: Defining problems of challenge Step II: Collaborate planning the lesson Step III: Implementing demonstration lesson Step IV: Discuss lesson & reflect on its effect Step V: Revise the lesson Step VI: Teach the revised lesson Step VII: Discuss the lesson & reflect again Step VIII: Reflection compiled & shared - The results are shown below. Because of insufficient number of data, it is not possible to generalize the progress made toward the Overall Goalat either the district or provincial level. Nevertheless, the available data from five provinces out of ten and findings are shown for reference. - There is a tendency that the scores for the second demonstration lesson (Step VI) are higher than the first demonstration lesson (Step III). The score of the last step (Step VIII), which looks at recording the discussion and the other activities is lower than other.

Progress made toward the Outputs

Province	Central	North Western	Copper belt,	North ern	East ern	Lusaka	Muchin ga	Lua pula	West ern	South ern
District	Kabwe	Solwezi	Ndola	Kasama	Chipata	Lusaka	Mpika	Mansa	Mongu	LG
SampleNo.	NA	3	9	NA	NA	NA	2	7	6	NA
8 steps	NA			NA	NA	NA				NA
I	NA	2.00	1.98	NA	NA	NA	2.00	2.00	2.00	NA
II	NA	1.96	1.96	NA	NA	NA	2.00	1.71	1.67	NA
III	NA	1.83	1.90	NA	NA	NA	1.88	1.83	1.55	NA
IV	NA	2.00	1.99	NA	NA	NA	2.00	1.83	1.93	NA
V	NA	2.00	1.83	NA	NA	NA	1.75	1.58	2.00	NA
VI	NA	2.00	2.00	NA	NA	NA	2.00	1.75	1.56	NA
VII	NA	2.00	2.00	NA	NA	NA	2.00	1.85	1.81	NA
VIII	NA	1.71	1.98	NA	NA	NA	0.71	1.88	1.43	NA

( ): Sample number, LG*: Livingstone
Source: STEPS Project

2. Is the capacity of the resource persons for implementing SBCPD enhanced?

[PDM Indicator 2-1]: No. of resource persons (stakeholders and facilitators) trained in lesson study

Training for the resource persons was planned in three categories. They are 'Core Technical Team and National level Facilitators', 'Stakeholders' and 'Facilitators'. The training was planned up to the final year of the Project and has been achieved almost as planned.

Table Achievement of the training for the resource persons

Category	Place	No. of Participants	
		Plan (2012-2013)	Achievement (2012-2013)
Core Technical Team and National level Facilitator	Japan	20	24
Stakeholders	Japan	23	16
	Zambia	1600	2749
Facilitator	Kenya	12	7
	Japan	12	16
	Malaysia	80	72
	Zambia	370	323

Progress made toward the Outputs	2. Is the capacity of the resource persons for implementing SBCPD enhanced?	Total | | 2,117 | 3207 Source: STEPS Project
		[PDM Indicator 2-2]: Self-evaluation of the resource persons on their performance - Most of the interviewed resource persons who were trained in Japan or who attended the workshops where Japanese short term experts showed their demo lessons, expressed that observation of good examples of student-centered lessons and other good educational practices were very meaningful for their capacity development. Most of the stakeholders and facilitators interviewed in Central province and Copper-belt province were aware of their professional growth through the training received and the workshops they organized. - There have been opportunities at the district and provincial levels where resource persons can share the outcomes of the training with other teachers and officers. After coming back from the training courses abroad, they are asked to report and share what they learned at several occasions such as facilitator workshops and subject association meetings.
		[PDM Indicator 2-3]: Evaluation of the resource persons' performance by the beneficiaries - Data has not been collected. But several positive aspects about the resource persons' performance were mentioned during the mid-term review. For example, those who received training in Malaysia share their learning experience on subjective learning at facilitator workshops. - The Project formulated a Plan for Capacity Development of Resource Personnel under STEPS Project. Several JICA's training courses are strategically utilized based on this plan. Appropriate personnel for each target group in this plan are sent to JICA's training and the outcome of the training has been fully utilized in the Project activities in Zambia.
	3. Are the reference materials for implementing SBCPD developed?	[PDM Indicator 3-1]: Availability of developed reference materials in schools - Teaching Skills Book was revised to be a second edition andcurrently15,000 copies are under printing. - Management skills book and Implementation guidelines have not revised yet and are going to be revised during the project period. 'Zambia Journal of Teacher Professional Growth, Volume 1, Number 1' was published and 3,000 copies were printed. The second volume is currently under printing.
		[PDM Indicator 3-2]: User' evaluation of the developed reference materials - Data has not been collected. But education officers (PEST and DEST) and head teachers interviewed in Central Province and Copper-belt Province appreciated that the reference books that the Projecthas developed were very useful for implementing lesson study. In addition, the

		STEPS brochureis considered to be useful to understand the project activities.

1. Achievement of the Project (Continued)

Evaluation items		
Main items	**Sub-items**	
Status of the Inputs	Inputs made by the Zambian side	The input from the Zambian Government has been provided almost as planned.
	-Counterpart Personnel	31 personnel have been worked for the Project at the national level (See Annex 4 for details.). The Zambian counterparts at the national level were available as agreed. Yet, the current number of the Core Technical Team is not sufficient due to accumulated tasks.
	-Facilities	The government facilities (over two thousand schools, the National Science Center, the Curriculum Development Center) and the equipment provided have been effectively utilized. See Annex5 for details.
	-Fund	Around 34 million ZMW is estimated to have been spent by the Zambian side for the Project. See Annex6 for details.
	Inputs to be made by the JICA side	The input from the JICA side has been provided almost as planned.
	-Experts	4 long-term, 2 short-term experts have been assigned. In addition, a curriculum support mission has been dispatched. See Annex7 for details.
	-Equipment	Equipment of the value of around 2 million ZMW, including vehicles, laptop computer, video camera, have been provided by JICA. See Annex8 for details.
	Training in Japan and the third countries	Training in Japan and the third countries for the resource persons have been provided by JICA. 56 officers and teachers have been trained in Japan. See Annex9 for details.
	Other local costs	Local costs for printing reference books, travels, fuels, maintenance, salary for the local staff, and other experts' activities have been borne by JICA. The total is1,967,300ZMW.

2. Implementation process

Evaluation items		Findings
Main item	Sub-items	
Progress of Activities	Have the activities been implemented as scheduled?	- Mentoring visits to the seven new provinces by the National Core Technical Team and the three mentor provinces have been conducted twice. The number of the visits is less than planned due to lack of the fund and the human resources. - Conducting the baseline survey took longer than planned. - There was also a delay in data collection for the Mid-term Review.
	Were there any factors contributed to the progress?	- There are some factors that have contributed to the smooth implementation of the Project. The Project utilizes the existing framework of SPRINT, which enables the Project to use resources that are allocated to SPRINT including personnel, budget, facilities, and institutions for the Project. In addition, major components of lesson study, e.g., school based training, teacher group meeting, lesson demonstration and observation, discussion, reporting and recording, had been also conducted even before lesson study was introduced, which made it easier for lesson study to be accepted. - Lesson study seems to be well suited to the Zambian national trait and culture where teachers are willing to share their experience and knowledge with other colleagues.
	Were there any factors obstructed the progress?	- The insufficient number of personnel the Core Technical Team seems to be a part of the causes for delays in some activities. - Time-taking procedure for executing budget is an obstructing factor. - The composition of the members of theCore Technical Team, namely, bringing together the members from various Provinces, has made it difficult for the Team to make prompt decisions In order to address this issue, re-structuring the Core Team members according to specialization has been discussed.
Decision making and communication	How have the important decisions been made?	- NEST Administrative Committee, consisting of education officers from all the provinces, chaired by Permanent Secretary, is the highest decision making body for the Project. It has been held once. - Under the NEST Administrative Committee, NEST Coordinating Sub-Committee, chaired by Chief Education Officer, Teacher Education Department, has been established to undertake overall coordination of the Project including planning, reviewing and revising the master plan for SBCPD. It has been held four times. - Under this sub-committee, PEST has been established in each province as a decision-making body at the provincial level.
	Has the communication within the Project	- The communication between Zambian personnel and JICA Experts is well maintained. - The communication between the national and the provincial levels is well maintained through meetings, workshops and monitoring reports.

	been smooth?	
Monitoring	Has regular monitoring been conducted? How has it been conducted?	- SBCPD activities including lesson study is monitored by periodical reporting and regular visits by ZEST, DEZT and/or PEST. Each school is required to submit Implementation Report every term. Reports submitted by several schools are summarized by ZIC as another report which is submitted to DESTs. DESTs are also required to do the same for PEST. Most of the people interviewed said this reporting practice is well being maintained. - School is asked to keep SIR (School In-service Record) book for any CPD activities. - Monitoring visit to schools is conducted by ZESTs and DESTs Monitoring visits to schools by PEST are also organized when needs arise.
Counterparts	Have appropriate counterpart personnel been assigned?	- In general, no complaints were heard during the interviews about the personnel assigned to the Project. However, widening the gap in the capacity between core members (Core Technical Team and KK members) and other facilitators is causing disparity in the amount and the quality of work to be done. - Because the workload and the responsibility of the National Core Technical Team has been getting heavier and heavier, restructuring and expansion of the Team is being discussed.
	Have the counterpart personnel been committed and involved actively?	- Most of the Zambian personnel involved in the Project are committed well to the project activities.
Technical transfer	Has the method of technical transfer been appropriate?	- The Project well utilizes JICA's training. The Project developed a long-term human resources development plan which convinced JICA of the importance of human resources development. Many stakeholders in the Project who were interviewed highly appreciated the training programs conducted in Japan and Malaysia that worked as opportunities to learn subjective learning and Kyozai-Kenkyu which are not easy to comprehend just by reading or hearing.

3. Five evaluation criteria

3-1 Relevance

Evaluation items		Findings
Main items	Sub-items	
Consistency with the national policies	Is it consistent with Zambia's development policy?	- This project is highly relevant with the policy objectives of the Government of Zambia. One of the prioritized objectives of the Sixth National Development Plan (2011-2015) and the National Implementation Framework III (2011-2015) is to improve the quality of education at all levels, and more specifically, to improve students' learning achievement in science and mathematics. This is also well articulated in the Education Policy document "Educating Our Future (1996)". - School Based Continuous Professional Development (SBCPD) is chosen as one of the strategies in the National Implementation Framework III to improve the quality of education in the chapters of Basic Education and High School Education respectively. In the chapter of Teacher Education, SBCPD through lesson study is mentioned as an approach aiming at improving teacher performance of pedagogy. - Ministry of Education developed "the SBCPD Master Plan 2006-2023'. This shows the MOE's strong commitment to SBCPD.
	Is it consistent with Japan's foreign assistance policy?	- Supporting the quality improvement of education is put as one of major areas of Japan's aid policy for Zambia. The STEPS project is well aligned with this policy as it has aimed at improving the quality of teaching and learning through lesson study.
Appropriateness of the means	Is the Project appropriate as means to enhance education development in Zambia?	- The lesson study approach is well fit the existing SPRINT (School Programme of In-service for the Term) framework in the SBCPD policy in Zambia and seems be highly appropriate in the context of Zambia. - The Project intended to use provinces that have introduced lesson study by the time of the SMASTE Phase II, to mentor seven new provinces. This approach does not seem to work effectively as intended in some new provinces due to lack of budget.
	Are there any inconsistencies or problems in the current PDM?	- Objectively verifiable indicators should have had targets so that they allow the Mid-term Review team to assess the extent of achievement in the Project Purpose and Outputs. Such indicators should have had adequate number of data to make judgment for the extent of achievement. Some indicators have not been collected at the Mid-term Review. This also made it difficult to have comprehensive understanding of the achievement in the Project.
	Does the project match the needs of the target group?	- The SPRINT framework has been in place since 1996 and there has been a practice of "Demonstration-Observation-Discussion-Implementation (DODI)" where only competent teachers plan lessons individually. The discussion sessions after observing lessons were not active or fruitful. Lesson study was introduced to vitalize such situation of CPD in Zambia. It succeeded to help Zambian teachers learn teaching

Appropriateness of the means		skills with more collaborative and productive procedure. - The Project has promoted collaborative approach in planning, implementing demonstration, discussing and revising lessons. This enabled teachers to learn from each other and commit themselves to improve lesson through lesson study. - Most of the teachers interviewed in during the Mid-term Review admitted that lesson study is a valuable chance to learn the teaching skills of their colleagues and this collaborative approach has helped their learning effectively.
Target groups	Was the selection of the target groups appropriate?	- The selection of the target group in this way was appropriate. In the mentor provinces, the target was expanded to lower grades (Grade 1 – 7), while for the other seven new provinces, only grade 8-12 teachers were targeted. This phase-in approach would be appropriate as this has been experienced in the previous SMASTE Phase II.
Advantage of Japanese technologies	Is there any advantage of Japanese technologies or experience?	- Japan has been accumulating a variety of resource persons and experiences for lesson study. In addition, JICA has experience in supporting the improvement of teaching skills through In-service training in African countries. JICA also provides a forum that brings different countries together to share their experiences and knowledge through technical exchange programs and regional conferences. These seem to be advantage for the Project.
Changes of the environment surrounding the Project	Have there been any serious changes around the project besides the important assumptions?	- Rises in prices has affected the overall activities to a certain extent. For example, within a limited budget and with the increase of the accommodation cost during business travels, the number of night allowed for a travel has been limited. Any other influential change around the project has not been observed.

3-2 Effectiveness

Evaluation items		Findings
Main items	**Sub-items**	
Likelihood of achieving the Project Purpose	Is the Project Purpose specific enough?	- As long as the teaching skills are defined as those to be measured by the evaluation instruments, it is specific.
	To what extent have the teaching skills been enhanced?	- See 'Progress made toward the Project Purpose'
	Is the Project Purpose likely to be achieved?	- To discuss the achievement of the Project Purpose, it is necessary to set a clear target at the objectively verifiable indicators. The achievement of the Project Purpose heavily depends on the progress of the Output 1. As no new province has achieved the target implementation rate (70%), it is too early to judge.
	What are the factors to promote the Project	- As the Outputs have not been produced enough, it is too early to clarify them.

	Purpose?	
	What are the factors to prevent the Project from achieving the Project Purpose?	- Same as the above.
Relation between the Project Purpose and the Outputs	Have the outputs produced contributed to the achievement of the Project Purpose ?	- The Output 1 (strengthening SBCPD) is linked with the Project Purpose (Enhancing teaching skills) in means and ends relation clearly.However, while the percentage of schools implementing lesson study in three mentor provinces have reached (70%), that in seven new provinces is still under 50%. The contribution of the Output 1 to the Project Purpose seems high in the mentor three provinces but not so in the new provinces. - The Project has trained considerable numbers of recourse persons (Core technical team, Facilitators) under the Output 2. Those personnel have been contributing to the Project Purpose by engaging themselves in the nationwide expansion and implementation of lesson study. The Kyouzai-Kenkyu team members who have been trained in Japan are expected to contribute to increase in the remaining period of the project.
Important Assumptions	Have the important assumptions for the Project Purpose been fulfilled?	- They have been fulfilled so far.

3-3 Efficiency

Evaluation Question		Findings
Main question	**Sub question**	
Achievement of the Outputs	Have the Outputs been produced as planned?	- Regarding Output 1, while the implementation rate of lesson study of the three mentor provinces have already reached the target, the rate of the seven new provinces has not reached. Output 2 has been produced almost as planned. As for Output 3, revisions of the management skills book and the implementation guidelines are behind the schedule.
	Have there been any promoting or obstructive factors for achieving the Outputs?	- Though the mentoring activities has not taken place as expected due to challenging budget situation, the experience of the previous phases of the Project has been used for expansion to the new provinces through national level meetings and technical support visits of the National Core Team. - Overload of the National Core Team and time-consuming administrative procedure to execute the budget caused delay in some activities at the national level.

	Have the important assumptions for the Outputs been fulfilled?	- Basically they are fulfilled.
Relation between the Outputs and Activities	Have the activities effectively contributed to produce the outputs?	- Using the existing framework of the SPRINT has allowed the Project to implement the project activities efficiently.
	Have the activities been sufficient to produce the Outputs?	- Activities for producing each Output seem sufficient.
Appropriateness of the Inputs	Have the timing, number, duration and field of Japanese experts been appropriate?	- There have not been mentioned any concerns about the timing, number, duration and field of Japanese experts.
	Have the timing, volume and specification of provision of equipment been appropriate?	- No serious problems have been observed about timing, volume and specification of the equipment. Zambian side has provided convenience for comfortable use the equipment.
	Have the timing, number fields and competency of the C/P been appropriate?	- Some of the core personnel, in particular, those who are competent, have shouldered too much workload, which caused delay in revisioning the teaching skills book.
	Have the physical facilities been sufficient to implement the project activities?	- The existing government facilities including the National Science Center, Curriculum Development Center, Provincial, District and Zone Resource Centers have been well utilized for the implementation of the Project.
	Have the timing, duration, contents of the counterpart training in the third country and Japan been appropriate?	- See 'Technical Transfer' in 2. Implementation.
Cost Efficiency	Will the degree of the project achievement be enough to compensate the cost of inputs?	- The budget of the Japanese side is in the average level of similar education projects in other countries. The cost borne by the Zambian side for lesson study activities is maintained within the CPD budget. Therefore the cost efficiency of the Project is considered at an acceptable level.

3-4 Impact

Evaluation Question		Findings
Main question	Sub question	
Likelihood of achieving the Overall goal by year 2018?	Will the students' learning process in science and mathematics be improved	- Students' learning process in the classroom is expected to be improved if teachers' teaching skills are enhanced and teachers continue applying the skills. However, the achievement of the Project Purpose heavily depends on the progress of the Project Purpose. As the degree of the achievement of the Project Purpose cannot be assessed at this stage, it is too early to judge the prospect of the Overall Goal .
	Will important assumptions for the Overall Goal be fulfilled?	- After the new policy was introduced to raise the average salary of teachers, environments conducive to SBCPD has been strengthened. Because of the policy, many teachers also tend to stay in teaching jobs. -
	Will there be any obstructive factors to the achievement of the Overall Goal ?	- In sufficient teaching and learning materials at school level may discourage teachers to use learner-centered teaching and learning methods, which may affect the students learning process.
Other ripple effects	Has there been any positive effect beyond the project framework?	- Through interviews, it was confirmed that in some province, lesson study is expanding beyond the target districts and target grades of the Project.. - The interviews have confirmed that lesson study has been applied to other subject than Mathematics and Science in the mentor provinces. - Some provinces start implementing lesson study in non-target districts. - KK Team members were asked to contributed to curriculum development of science and mathematics and textbooks development in mathematics (Grade1), which can be considered as spill-over effect of the Project,. - Zambia received study visits on lesson study from Namibia, Burundi, Malawi and Senegal. The experience of lesson study was shared with educators of those countries. - VVOB supports the community schools in SBCPD. The reference materials of STEPS Project were used in their support activities.
	Has there been any negative effect caused by the project?	- There haven't been any serious negative effect caused by the Project
Relation between the Overall Goal and the Project	Considering the Project Purpose, is the Overall Goal properly set?	- The distance from the Project Purpose to the Overall Goal is too close.

Purpose	Is the important assumption still appropriate?	- 'Teachers continuously apply improved teaching skills to teaching" is an important essential to achieve the Overall Goal. Conducive environments for teachers to do so need to be maintained.

Progress made toward the Outputs

3-5 Sustainability

Evaluation Question		Findings
Main question	Sub question	
Policy aspect	Will the policy of promoting education quality continue?	- Quality, as well as access and equity, has been emphasized in the national policy and the promotion of CPD has been regarded as a key strategy. This trend will continue as no needs for change is considered.
Budgetary aspect	Will the necessary budget for related activities continue to be secured?	- The budget for the continuinglesson study is likely be secured within the framework of SPRINT. - Some of the budget borne by the Project such as printing skills book needs to be incorporated into the budget for Zambiain consideration of sustainability.
Organizational aspect	Will the implementing agencies be capable to manage the related activities?	- MOE has accumulated the experience of implementation of lesson study. It is capable enough to manage related activities in general. - In order to improve the quality of lesson study, utilization of the trained personnel in this phase, especially the Core Technical Team and KK Teams, is critical.
	Will the personnel capacitated continue to work for Education sector?	- As the project covers from the school level to the Ministry level, most of the personnel who have been involved in the Project continue to utilize their capacity. - In Zambia, competent resource persons such as KyozaiKenkyu team members of the Project are available in the provinces. The framework of the SPRINT which covers all over the country has advantages to find and utilize those competent resource persons in the provinces for national level activities.
Technical aspect	Will the implementing agencies keep their skill level for the related activities?	- A sufficient number of resource persons in the aspect of technical matters have been trained. It is critical how these resource persons will be utilized during and beyond the Project period. It is too early to judge this matter at this moment.
	Are the skills books, guidelines and journals developed useful for improving teaching skills?	- The teaching skills book, the management skills book and the implementation guideline are useful for maintaining the quality level of lesson study. Through accumulating the experience of lesson study, teaching skills are expected to improve. - The future plan regarding how the journal (ZJTPG) will be maintained in terms of budget and technical aspects is not clear at this stage.

Annex 2

Baseline instrument for Teachers

Format for Assessing Structured Teaching Skills & Performance

Name of Teacher:	**District:**	
Position:	**School:**	
Gender:	**Subject Observed:**	
TS No.:	**Date:**	
Topic of Lesson:	**Grade:**	**No. of Pupils: M_____/F_____**

PART A: Planning - Ability of Planning a Lesson

Was the teacher able to plan a lesson which enabled pupils to learn subjectively?					
Overall Evaluation (P)	☐Plan was unacceptable level.	☐Planned insufficiently.	☐Planned without considering pupils.	☐Planned with certain level of considering pupils.	☐Planned for subjective learning of pupils.

Planning—1 Ability of Setting up Lesson Objectives		NO	AVG	YES
P-1-1	Were the lesson objectives clearly stated in the lesson plan?			
P-1-2	Were the stated objectives appropriate for pupils' grade level of learning?			
P-1-3	Were the stated objectives attainable by the pupils in the lesson?			
P-1-4	Were the stated objectives measurable?			
Planning—2 Ability of Structuring a Lesson				
P-2-1	Was there an introduction in the lesson plan?			
P-2-2	Was there a development part in the lesson plan?			
P-2-3	Were there evaluation and conclusion parts in the lesson plan?			
P-2-4	Was the lesson flow planned to achieve the lesson objectives?			
P-2-5	Was the lesson planned based on sufficient subject matter knowledge?			
P-2-6	Was the lesson planned based on sufficient pedagogical skill?			
Planning—3 Ability of Considering Pupils				
P-3-1	Were activities or tasks of pupils planned?			
P-3-2	Did the teacher plan the lesson considering the previous knowledge of pupils?			
P-3-3	Were teaching materials prepared to support learning by pupils?			
P-3-4	Were teaching materials adequate to support learning by pupils?			

PART B: Delivering - Ability of Delivering a Lesson

Was the teacher able to conduct a lesson which enhanced subjective learning by pupils?					
Overall Evaluation (D)	☐Conducted but no pupil showed subjective learning.	☐Conducted with less than 50% of the pupils having subjective learning.	☐Conducted with 50% of pupils having subjective learning.	☐Conducted with more than 50% of pupils having subjective learning.	☐Conducted with 100% of pupils having subjective learning.

Delivering—1 Ability of Delivering Lesson along a plan		NO	AVG	YES
D-1-1	Were the lesson objectives expected during the lesson?			
D-1-2	Was the introduction conducted as planned?			
D-1-3	Was the development conducted as planned?			
D-1-4	Did the teacher attempt to confirm a particular concept or values in the process of teaching?			
D-1-5	Was there a time for evaluating the lesson to confirm whether the students had learnt?			
D-1-6	Was the conclusion conducted as planned?			
D-1-7	Was the lesson content correct?			
Delivering—2 Ability of Enhancing Pupils' Subjective Learning				
D-2-1	Did the introductory part of the lesson motivate pupils?			
D-2-2	Was there a time for pupils to think?			
D-2-3	Did the teacher's questions motivate pupils' thoughts during the lesson?			
D-2-4	Did the teacher structure the questions for enhancing higher order thinking of pupils?			

D-2-5	Did the teacher use any kind of teaching materials apart from chalkboard and chalk?			
D-2-6	Did the teacher use improvised or locally available teaching materials in the lesson?			
D-2-7	Did the teaching materials used in the lesson enhance pupils' understanding?			
Delivering—3 Fundamental Ability of Delivering a Lesson				
D-3-1	Did the teacher manage time well during lesson implementation?			
D-3-2	Did the teacher manage chalkboard well?			
D-3-3	Did the teacher give enough attention to the learning environment?			
D-3-4	Was the teacher's attitude to the pupils positive for their learning?			
D-3-5	Did the teacher attempt to involve all the learners in the lesson?			

PART C: Observing - Learning of Pupils in a Delivered Lesson

Were the pupils able to attain lesson objectives through their subjective learning?					
Overall Evaluation (L1)	☐No pupils attained objectives.	☐Less than 50% of pupils attained objectives.	☐50% of pupils attained objectives.	☐More than 50% of pupils attained objectives.	☐All pupils attained objectives.
Overall Evaluation (L2)	☐No pupils had subjective learning.	☐Less than 50% of pupils had subjective learning.	☐50% of pupils had subjective learning.	☐More than 50% of pupils had subjective learning.	☐All pupils had subjective learning.

Learning—1 Extent of Attainment		NO	AVG	YES
L-1-1	Were the lesson objectives appropriate considering learning level of pupils?			
L-1-2	Were the pupils able to find core contents or concepts by themselves?			
L-1-3	Were the pupils able to conclude what they learned in the lesson?			
Learning—2 Quality of Learning (Extent of Subjective Learning)				
L-2-1	Were the pupils' interested in the lesson?			
L-2-2	Were the pupils thinking deeply to answer the given questions/tasks?			
L-2-3	Did the pupils participate in the lesson subjectively?			
L-2-4	Was there a presentation by pupils in the lesson?			
L-2-5	Was there a discussion among pupils to find answers or better solutions to the given tasks?			
Learning—3 Operational Ability				
L-3-1	Were the pupils able to understand the prepared teaching materials?			
L-3-2	Were the pupils able to use the prepared teaching materials?			
L-3-3	Were the pupils able to conduct the expected activities in the lesson?			

Any other comments for improving the teacher's practices.

Ability of Planning a lesson:

Ability of Delivering a lesson:

Learning of Pupils in a delivered lesson:

Name of Observer: **Title:**

Signature **Date:**

Annex 3

BASELINE INSTRUMENT FOR PUPILS

Format for Assessing Learning of Pupils

Name of School:	**District:**
Grade/Class:	**Gender of Pupil: Male_____ Female_____**
Subject:	
Topic:	
Date:	
Name of Teacher conducted a lesson:	

Please answer questions by ticking in the columns **NO** or **YES.**

S/N	Questions	NO	YES
1	Did you understand today's lesson?		
2	Was the lesson easy for you?		
3	Was the lesson difficult for you?		
4	Did you understand the aim of this lesson?		
5	Do you think you have achieved the tasks required by the teacher?		
6	Are you able to explain what you learnt in today's lesson?		
7	Do you like the way the lesson was taught?		
8	Did the teacher ask you questions which made you get interested in the lesson?		
9	Did you find answers to the given problems in the lesson?		
10	Did you do activities or tasks on your own?		
11	Were the comments of your classmates in the lesson useful for you?		
12	Were you able to understand tasks given to you?		
13	Were you able to do tasks given by the teacher in this lesson?		
14	Do you think that the tasks given to you were easy?		
15	Do you think that the tasks given to you were difficult?		
16	Did you enjoy doing the given tasks?		
17	Did you manage to finish the tasks within the given time?		
18	Were the teaching/learning materials provided in the lesson useful for you?		

Monitoring Format on Facilitation of Lesson Study Activities

Basic information:

Province/District	
Name of School	
Name of Facilitator	
Suject/Grade of Teachers	

Date:	
Name of Monitor:	

Facilitation check list:

Tick steps observed	Step		Facilitation check list	No	Unclear	Yes
	1. Defining problems or challenge	1-1	Discussion among teachers was held to define problem.			
		1-2	Each teacher was given opportunity to give his/her comment in the discussion.			
		1-3	Teachers agreed on certain problem/s to be addressed by lesson study			
		1-4	The problem/s was found by the teachers. (not given by outsiders)			
		1-5	The problem/s defined is considered as appropriate for lesson study.			
		Comments:				
	2. Collaborately planning the lesson	2-1	Teachers gathered to prepare a lesson plan.			
		2-2	Lesson plan was prepared as a team of teachers.			
		2-3	Core components (Rationale, Objectives, Lesson development) were put in lesson plan prepared.			
		2-4	Teachers refered to various reference books to prepare a lesson plan.			
		2-5	Each teacher was able to give input to the lesson plan.			
		2-6	Discussion of teachers was constructive.			
		2-7	The points for observing demo-lesson were comfirmed among the teachers.			
		2-8	Allocation of tasks for observing demo-lesson was done among the teachers.			
		Comments: Please include another question:The teacher to present the demo lesson chosen in advance?				
	3. Implementing demonstration lesson	3-1	Demo-lesson was done for pupils.			
		3-2	Teachers in a group observed demo-lesson.			
		3-3	Copies of the Lesson plan were distributed to each observer.			
		3-4	Observation tasks were allocated to each observer.			
		3-5	Observers were trying to see reactions/activities/expressions of pupils.			
		3-6	Observers were moving in classroom to see the pupils (not always sitting at the back).			
		3-7	Observers were recording their observations while observing.			
		3-8	Observers worked without assisting demo-teacher.			
		Comments:				
	4. Discuss lesson & reflect on its effect	4-1	Facilitator and rapotur were assigned for the discussion.			
		4-2	Teachers observed demo-lesson participated in the discussion.			
		4-3	Demo-teacher was asked to express his/her comments on implementing the lesson.			
		4-4	Each observer was given opportunity to comment on the lesson			
		4-5	Points to improve the lesson were discussed.			
		4-6	The Comments and suggestions made were constructive.			
		4-7	Constructive atmosphere was kept in the discussion.			
		4-8	Important points in the discussion were recorded.			
		Comments:				

	5. Revise the lesson	5-1	The points to be revised were clear among the teachers.			
		5-2	Revising work was done as group work.			
		5-3	Revision was done based on suggestions in their post-demo discussion.			
		5-4	Revision was done in a week time after the 1st demo.			
		Comments:				
	6. Teach the revised lesson	6-1	Revised-lesson was done for pupils.			
		6-2	Teachers in a group observed revised-lesson.			
		6-3	Lesson plan was distributed/copied to each observer.			
		6-4	Observation tasks were allocated to each observer.			
		6-5	Observers were trying to see reactions/activities of pupils.			
		6-6	Observers were moving in classroom to see the pupils (not always sitting at the back).			
		6-7	Observers were recording their observations while observing.			
		6-8	Observers kept their work without assisting demo-teacher.			
		Comments:				
	7. Discuss the lesson & reflect again	7-1	Facilitator and rapotur were assigned tasks for discussion.			
		7-2	Teachers who observed the revised-lesson participated in the discussion.			
		7-3	Demo-teacher was asked to evaluate him/herself on the implementing the revised lesson.			
		7-4	Each participant was given an opportunity to comment on the lesson.			
		7-5	Points to improve the lesson were discussed.			
		7-6	Comments were given were constructive and not critisizm of the teacher who presented			
		7-7	Constructive atmosphere was kept in the discussion.			
		7-8	Important points in the discussion were recorded.			
		Comments:				
	8. Reflections compiled & shared	8-1	Lesson plans for 1st demo and revised lesson were filed.			
		8-2	Records of discussions were filed.			
		8-3	Record book/file is always available at school.			
		8-4	Records include the comments/suggestions of teachers on the teaching techniques.			
		8-5	Records include the comments/suggestions of teachers on the subject contents or concept of the topic.			
		8-6	Records include the comments/suggestions of teachers on teaching materials.			
		8-7	Reflections made by the teachers were taken in the next lesson study cycle.			
		Comments:				

Project Design Matrix

Name of the Project: Strengthening Teachers' Performance and Skills through School Based Continuing Professional Development (STEPS)

Executing Bodies: Ministry of Education and JICA

Target Area: All nine (9) Provinces in Zambia (54 selected districts out of 74 districts)

Target Group: 1) Teachers teaching science and mathematics at Grade 8-12 in all provinces
2) Grade 1-7 teachers in three provinces (Central, Copperbelt, and North-western)

Annex 5

Duration of the Project: the date of the first assignment of a JICA Expert - 31st Dec. 2015

Version No.: PDM Ver.0

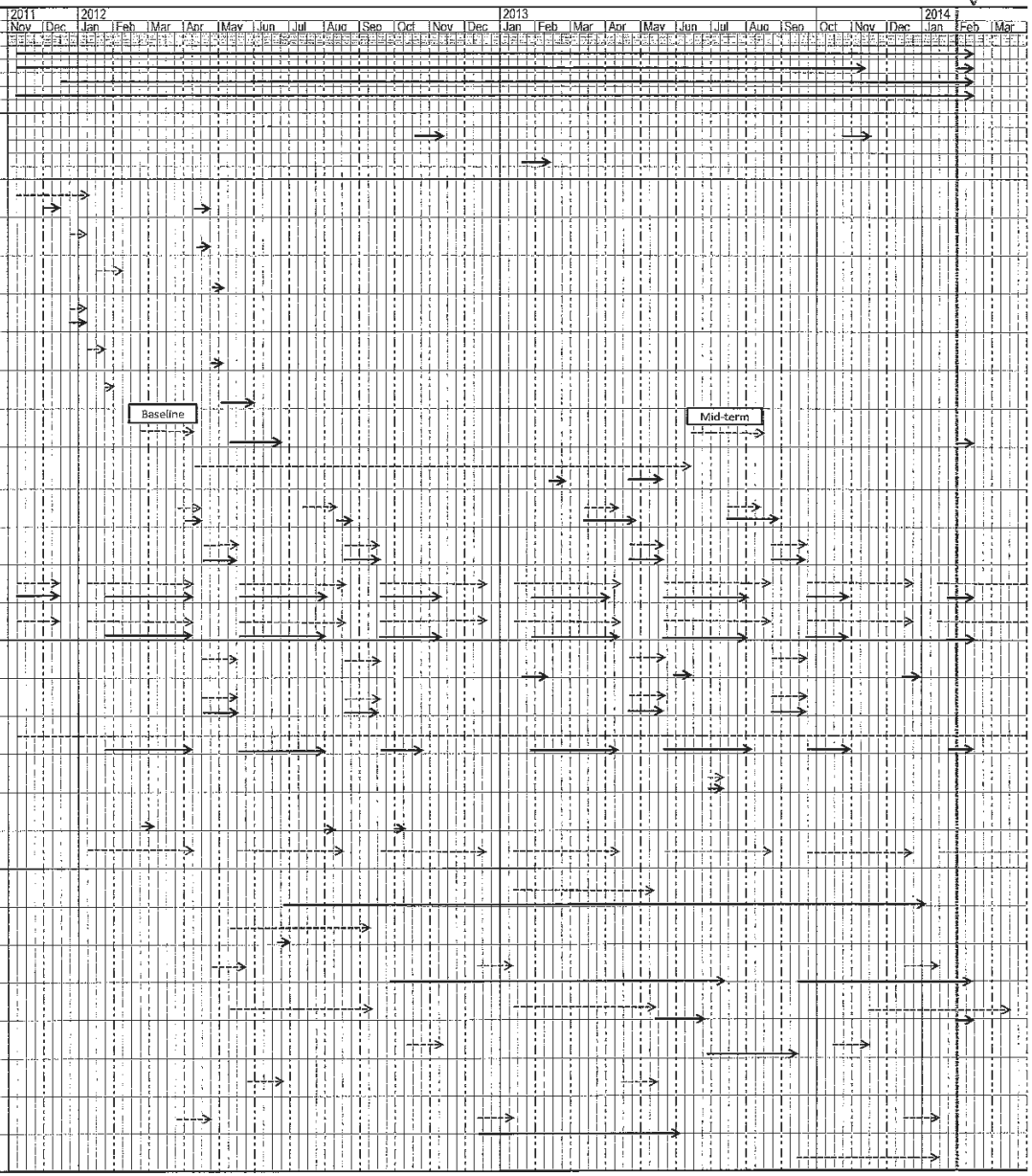
Date: 12th September 2011

Narrative Summary	Objectively verifiable Indicators	Means of Verification	Important Assumptions
Super Goal Quality of science and mathematics education is improved.	i. Scores in national assessment (Grade 5 Numeracy, Grade 9 Science & Mathematics) ii. Examination pass rate in Grade 9 and Grade 12 iii. International comparative study (SACMEQ)	i. National Assessment Survey Report published by Ministry of Education ii. Examination Results published by Zambia's Examination Council iii. SACMEQ result (if available)	
Overall Goal Students' learning process in science and mathematics is improved.	i. Result of lesson observation (Science and Mathematics) (students' activities) ii. Students' perception towards their learning	Baseline and Endline Survey Report i. Results of lesson observations ii. Student's questionnaires	Learning environment is not adversely deteriorated. Learning time of students is secured. Head teachers ensure that students are learning
Project Purpose Teaching skills are enhanced under School-based Continuing Professional Development (SBCPD)	i. Result of lesson observation (Science and Mathematics) (demonstration of teaching skills) ii. Self-evaluation of teachers in teaching skills iii. Students' evaluation of teaching	Baseline and Endline Survey Report i. Results of lesson observations ii. Self-evaluation of teachers iii. Evaluation by Students	Teachers continuously apply improved teaching skills to teaching. Trained teachers remain in school system.
Outputs 1. SBCPD is strengthened through Lesson Study.	i. % of schools implementing Lesson Study (target figure: 70% in all target grades) ii. Quality of Lesson Study verified through a prepared check list	i.Progress reports submitted by PEST ii. Baseline and Endline Survey Report	SBCPD is continuously implemented The motivation of teachers and all related stakeholders in participating SBCPD is maintained. Head teachers support SBCPD. Facilitators continue to offer technical support to lesson study not only in their own schools but also in assigned schools.
2. Capacity of resource persons for implementing SBCPD is enhanced.	i. Number of resource persons (stakeholders and facilitators) trained in lesson study (target figure will be determined later) ii. Self-evaluation of resource persons on their performance iii. Evaluation of resource persons by beneficiaries	i.Progress reports submitted by PEST (List of trained facilitators and stakeholders) ii. Self-evaluation of resource persons iii. Evaluation by beneficiaries	
3. Reference materials for implementing SBCPD are developed.	i. Availability of developed reference materials in schools (Skills books, Journals, Guidelines etc.) ii.Users' (teachers') evaluation on the developed reference materials	i. Reference Materials ii. Result of users' evaluation	
Activities **Preparation and Orientation Stage** 1-1 Prepare materials for induction WS 1-2 Conduct Induction WS for PEST's and DEST's on Lesson Study 1-3 Identify facilitators 1-4 Orient the PEST task team in conducting Baseline Survey 1-5 Train facilitators/DESTs in conducting Baseline Survey 1-6 Conduct necessary surveys for project evaluation 1-7 Mentor six provinces by National Core Technical Team **Implementation Stage** 1-8 Plan Stakeholders workshop 1-9 Conduct Stakeholders workshop 1-10 Implement Lesson Study in schools 1-11 Monitor implementation of Lesson Study 2-1 Conduct Facilitators WS 2-2 Conduct Stakeholders WS 2-3 Provide technical support to Lesson Study activities at school level 2-4 Conduct International Technical Workshop 2-5 Conduct International Technical Exchange 2-6 Conduct local technical exchange visits between provinces 3-1 Revise the Teaching Skills book 3-2 Revise the Management skills book 3-3 Produce of Lesson Study journals 3-4 Print Teaching, management skills books and journals 3-5 Distribute Teaching, management skills books and journals 3-6 Organise a contest on good practices of Lesson Study for schools 3-7 Document all good practices in journals	**Input from Zambian Government** • **Human resource** i NEST, National Core Technical Team, PEST and DEST members in all nine (9) provinces ii College/University lecturers iii NSC staff iv Trained resource persons (facilitators and stakeholders) through SMASTE Phase I and II • **Materials** i. Offices and other buildings used for activities under the project ii. Office Equipment iii. Vehicles and fuel iv. Teaching/learning materials used for Lesson Study • **Finances** i. Funds for implementation of the Lesson Study activities, including Stakeholders and Facilitators Workshops ii. Allowances for travel of local staff for project activities **Input from JICA** • **Human resource** i. Three (3) long term experts - Chief advisor / Management of Lesson Study, Science Education - Management of Lesson Study, Mathematics Education - Coordination and Monitoring of Lesson Study Activities ii. Short term experts when need arises in relation to the project activities. iii. Local technical advisor - Administration and Management of SBCPD • **Training** i. Provide opportunities for overseas training and conferences for Zambian counterparts and core resource persons in relation to the project activities. • **Materials** i. Office equipment (computers, printers, LCD projectors, video cameras etc.) used for project activities ii. Vehicles used for monitoring the project activities iii. Reference materials for teaching and learning science and mathematics • Finance i. Local expenses and other necessary allowances for JICA experts		• There is consistency of core officers. **Preconditions** • Zambian Government policy for strengthening and implementing CPD activities of teachers does not change adversely. • There will be political will. • Budget allocation at national, provincial and district levels is adequate and timely for SBCPD activities.

Plan of Operation and Actual Implementation of Activities - as of 31st January 2014

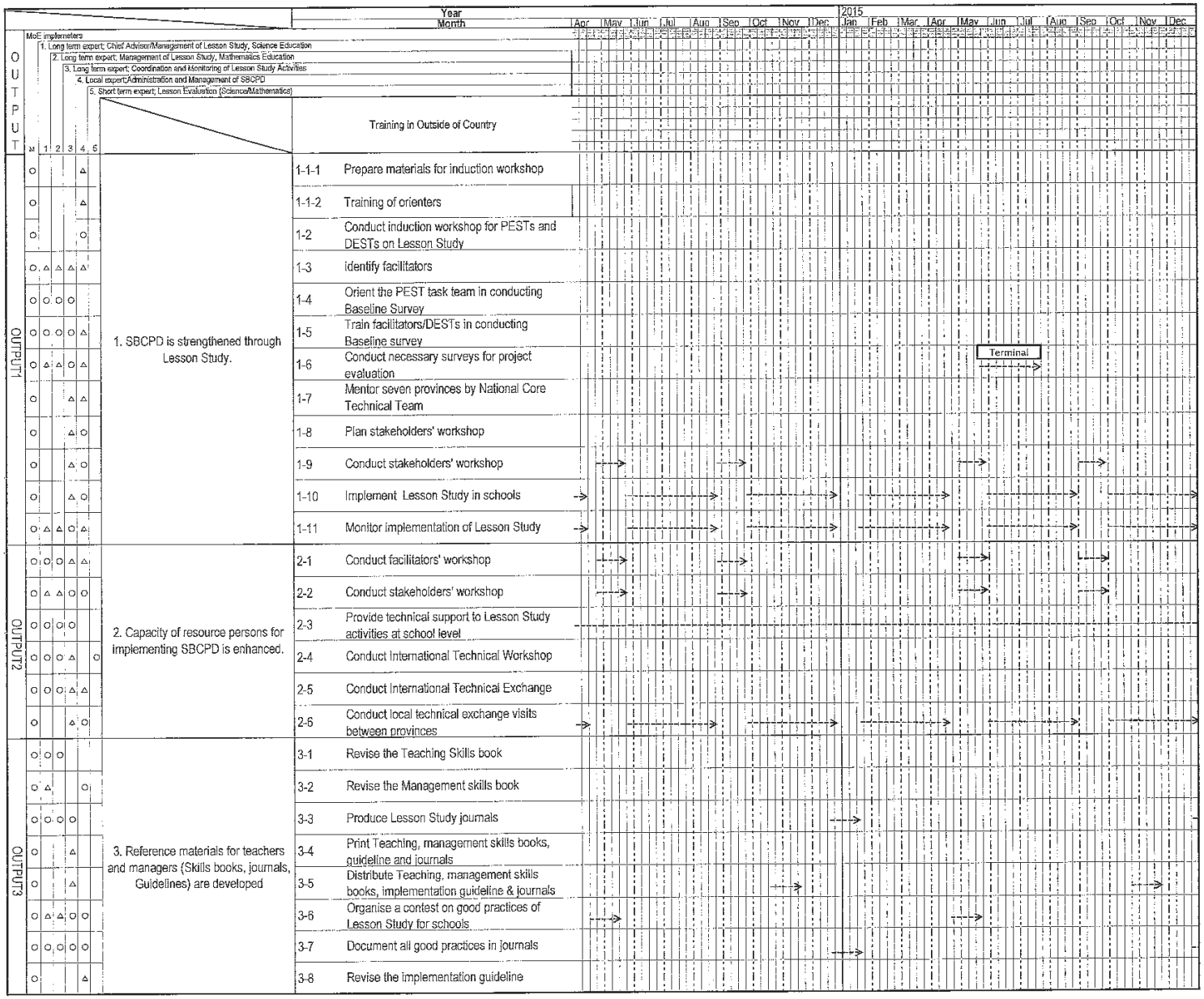
Annex 6

OUTPUT	M	1	2	3	4	5			
	MoE implementers								
	1. Long term expert; Chief Advisor/Management of Lesson Study, Science Education								
	2. Long term expert; Management of Lesson Study, Mathematics Education								
	3. Long term expert; Coordination and Monitoring of Lesson Study Activities								
	4. Local expert;Administration and Management of SBCPD								
	5. Short term expert; Lesson Evaluation (Science/Mathematics)								
	Training in Outside of Country								
OUTPUT1	○				△		1. SBCPD is strengthened through Lesson Study.	1-1-1	Prepare materials for induction workshop
	○				△			1-1-2	Training of orienters
	○				○			1-2	Conduct induction workshop for PESTs and DESTs on Lesson Study
	○	△	△	△	△			1-3	Identify facilitators
	○	○	○	○				1-4	Orient the PEST task team in conducting Baseline Survey
	○	○	○	○	△			1-5	Train facilitators/DESTs in conducting Baseline survey
	○	△	△	○	△			1-6	Conduct necessary surveys for project evaluation
	○			△	△			1-7	Mentor seven provinces by National Core Technical Team
	○			△	○			1-8	Plan stakeholders' workshop
	○			△	○			1-9	Conduct stakeholders' workshop
	○			△	○			1-10	Implement Lesson Study in schools
	○	△	△	○	△			1-11	Monitor implementation of Lesson Study
OUTPUT2	○	○	○	△	△		2. Capacity of resource persons for implementing SBCPD is enhanced.	2-1	Conduct facilitators' workshop
	○	△	△	○	○			2-2	Conduct stakeholders' workshop
	○	○	○	○				2-3	Provide technical support to Lesson Study activities at school level
	○	○	○	△		○		2-4	Conduct International Technical Workshop
	○	○	○	△	△			2-5	Conduct International Technical Exchange
	○			△	○			2-6	Conduct local technical exchange visits between provinces
OUTPUT3	○	○	○				3. Reference materials for teachers and managers (Skills books, journals, Guidelines) are developed	3-1	Revise the Teaching Skills book
	○	△			○			3-2	Revise the Management skills book
	○	○	○	○				3-3	Produce Lesson Study journals
	○			△				3-4	Print Teaching, management skills books, guideline and journals
	○			△				3-5	Distribute Teaching, management skills books, implementation guideline & journals
	○	△	△	○	○			3-6	Organise a contest on good practices of Lesson Study for schools
	○	○	○	○	○			3-7	Document all good practices in journals
	○				△			3-8	Revise the implementation guideline



Plan of Operation and Actual Implementation of Activities - as of 31st January 2014

Annex 6



ANNEX 7:

List of the Assigned Core Counterparts

No.	Name	Profession	Position	From	To
1	Ruth M. Mubanga (Mrs.)	Director - Teacher Education & Specialised Services	Project Manager (National)	Oct. 2011	June 2012
2	Vincent Chiyongo (Dr.)	Director - Teacher Education & Specialised Services	Project Manager (National)	June 2012	Dec. 2013
3	Muyangwa Kamutumwa (Mr.)	Director - Teacher Education & Specialised Services	Project Manager (National)	Jan. 2014	present
4	James Silwimba (Mr.)	Chief Edcuation Officer - Teacher Education	Project Coordinator (National)	Oct. 2011	June 2012
5	Esvah Chizambe (Ms.)	Chief Edcuation Officer - Teacher Education	Project Coordinator (National)	July 2012	present
6	Esvah Chizambe (Ms.)	Principal Education Officer, In-service - Teacher Education	Project Adiministrator (National)	Oct. 2011	June 2012
7	Mercy Mwiya (Ms.)	Principal Education Officer, In-service - Teacher Education	Project Adiministrator (National)	July 2012	present
8	Lackson Malambo (Mr.)	Principal Education Officer, Pre-service - Teacher Education	Pre-service unit member	Oct. 2011	present
9	Benson Banda (Mr.)	Principal Education Officer, National Science Center	Core Technical team member / SMASE Africa Chairperson	Oct. 2011	present
10	Grace Chilekwa (Ms.)	Principal, Mufulira College of Education, Copperbelt Province	Core Technical team / KK Math. member	Oct. 2011	present
11	Allan Lingambe (Mr.)	Principal Education Standards Officer, Northwestern Province	Core Technical team / KK Science member	Oct. 2011	present
12	Mercy Mwiya (Ms.)	Senior Education Officer - Primary Schools	In-service unit member	Oct. 2011	June 2012
13	Charles A. Chisanga (Mr.)	Senior Education Officer - Secondary Schools	In-service unit / Core Technical team / KK Math. member	Oct. 2011	present
14	Bessie Tembo (Ms.)	Senior Education Officer - Teacher Resource Centers	In-service unit / Core Technical team member	Oct. 2011	present
15	Keneth Likando (Mr.)	Senior Education Officer - Pre-service	Pre-service unit member	Oct. 2011	present
16	Pascalina Chiliboyi (Ms.)	Senior Education Officer - Pre-service	Pre-service unit member	Oct. 2011	present
17	Ruth Mwanza Mvula (Ms.)	Senior Education Officer - Pre-service	Pre-service unit member	Oct. 2011	present
18	Lazarous Mutale (Mr.)	Senior Curriculum Specialist, Mathematics	Core Technical team / KK Math. member	Oct. 2011	present
19	Chilufuya Mumba (Ms.)	Senior Education Standards Officer - Science & Math., Headquaters	Core Technical team / KK Science member	Oct. 2011	present
20	Lusulo Moosho (Mr.)	Senior Education Standards Officer - Mathmatics, Central Province	Core Technical team / KK Math. / PEST member	Oct. 2011	present
21	Hector Swazi (Mr.)	Senior Lecturer, NISTCOL	Core Technical team member	Oct. 2011	March 2012
22	Viston Machiko (Mr.)	Subject Coordinator-Secondary school, Central Province	Core Technical team / KK Math. / PEST member	Oct. 2011	present
23	Rodgers Kapyololo (Mr.)	District Education Standards Officer, Northwestern Province	Core Technical team / PEST member	Oct. 2011	present
24	Catherine S. Kunda (Ms.)	Education Standards Officer, Kalulushi, Copperbelt Province	Core Technical team / DEST member	Oct. 2011	present
25	Paul Njobvu (Mr.)	Senior Lecturer, Mufulira College of Education, Copperbelt Province	KK Math. member	Oct. 2011	present
26	Vincent Mudenda (Mr.)	Senior Lecturer, Nkrumah University, Central Province	KK Science member	Oct. 2011	present
27	Charity Kolala (Ms.)	Lecturer, Solwezi Coleige of Education, Northwestern Province	KK Math. member	Oct. 2011	present
28	Alexander Mulenga (Mr.)	District Education Board Secretary, Ndola, Copperbelt Province	KK Science / DEST member	Oct. 2011	present
29	Esther Kazeze (Ms.)	Subject Coordinator-Primary school, Central Province	KK Science / PEST member	Oct. 2011	present
30	Emellia Kunda Kasonde (Ms.)	Deputy Headteacher, Kapiri Girls Technical Secondary School, Central Province	KK Science/ DEST member	Oct. 2011	present
31	Rabbecah Twelasi (Ms.)	Technical Officer, National Science Center	Project Secretariat	Oct. 2011	present
	10 Provincial Education Officers, All Provinces		Project Manager (Provincial)	Oct. 2011	present
	10 Senior Education Standards Officers - Mathmatics, All Provinces		Project Coordinator (Provincial)	Oct. 2011	present
	10 Senior Education Standards Officers - Natural Science, All Provinces		Project Coordinator (Provincial)	Oct. 2011	present
	10 Education Officers - Teacher Education, All Provinces		Project Administrator (Provincial)	Oct. 2011	present

ANNEX 8:

Financial Input from Zambian Government (from 1st Nov. 2011 to 31 Dec. 2013)

1. National Level:

No.	Item	Average Amount per Event	No. of Event Conducted	Sub Total (ZMW)
1	Conduct of NEST Administrative Committee meeting	7,000.00	1	7,000
2	Conduct of NEST Coordinating Sub-committee meeting	12,000.00	4	48,000
3	Conduct of National Core Technical Team meeting	58,000.00	4	232,000
4	Conduct of the 3rd SMASE-WECSA Technical Workshop	200,000.00	1	200,000
5	Technical Exchange activity with other countries	40,000.00	2	80,000
6	Monitoring Activities	10,000.00	3	30,000
			Total in Zambian Kwacha	597,000

2. Provincial Level:

No.	Item	Average Amount per Event	No. of Event Conducted	Sub Total (ZMW)
1	Conduct of Stakeholders' Workshops (7 new provinces)	15,000.00	14	210,000
2	Conduct Facilitators Workshops (7 new provinces)	15,000.00	14	210,000
3	Conduct Facilitators Workshops (3 mentor provinces)	15,000.00	12	180,000
4	Monitoring Activities	4,000.00	60	240,000
5	Conduct of PEST meetings	500.00	60	30,000
6	Participation in Nnational level meetings	4,000.00	50	200,000
			Total in Zambian Kwacha	1,070,000

3. District, Cluster, Zone, School Level

No.	Item	Average Amount per Event	No. of Event Conducted	Sub Total (ZMW)
1	Conduct of Stakehoders' Workshops (3 mentor provinces)	6,000.00	75	450,000
4	Conduct of DEST meetings	500.00	378	189,000
5	Monitoring Activities	6,000.00	252	1,512,000
6	Participation in Provincial & District level /workshops	1,800.00	16,000	28,800,000
9	Conduct of Lesson Study Activities	150.00	12,000	1,800,000
			Total in Zambian Kwacha	32,751,000

Overall Total (ZMW): 34,418,000

Overrall Total (JPY): ¥615,901,053

* The amounts are estimated based on the number of workshops/meeting and their participants.

* All the items include expenses for fuels, consumables, subsistances & allowances of staffs.

ANNEX 9:

Building and Other Facilities Provided by Zambian Government

1.Building and other Facilities used for the Project

No.	Building/Facilities	Venue
1	Ministry of Education , Curriculum Develop Centre	Office space for JICA Experts / Venue for Core Technical Team meetings & other National level meetings
2	National Science Centre	Office space for JICA Experts / Venue for Core Technical Team meetings
3	10 Provincial Education Offices	Venue for PEST meetings
4	16 Provincial Resource Centers	Venue for PEST meetings / KK team meetings / Core Technical Team meetings / Facilitators workshops & other provincial level workshops
5	74 DEBS Offices	Venue for DEST meetings
6	74 District Resource Centers	Venue for DEST meetings / District level workshops
7	400* Zone Resource Centers	Venue for Zonal Workshops
8	16 Colleges & 50* Schools	Venue for Stakeholders' & Facilitators' Workshops
9	2,067 Primary & Secondary Schools	Venue for Lesson Study Activities of Teachers

*Estimated number

ANNEX 10:

List of Japanese Expert

No.	Name	Title	From	To
1	Kazuyoshi NAKAI (Mr.)	Chief Adviser/ Management of Lesson Study (Science Education)	30 Oct. 2011	Present
2	Kyoko YAMADA (Ms.)	Management of Lesson Study (Mathematics Education)	30 Oct. 2011	29 Oct.2013
3	Shuhei SAIKAWA (Mr.)	Coordination and Monitoring of Lesson Study Activities	1 Dec. 2011	Present
4	Shiori ABE (Ms.)	Management of Lesson Study (Mathematics Education)	15 Jan. 2014	Present
5	Kazuyuki KAMBARA (Mr.)	School Management and Mathematics Teaching	19 Feb. 2013	2 Mar. 2013
6	Kazushige MAEDA (Mr.)	Methodology of Mathematics Lesson	12 Oct. 2013	19 Oct. 2013

List of Third Country Expert

No.	Name	Title	From	To
1	Chee Kin LEONG (Dr.)	Senior Specialist (Mathematics Education), RECSAM, Malaysia	8 Jul. 2013	12 Jul. 2013
2	Dominador D. MANGAO (Mr.)	Specialist (Science Education), RECSAM, Malaysia	8 Jul. 2013	12 Jul. 2013

List of Local Consultant

No.	Name	Title	From	To
1	Edward Tindi (Mr.)	Technical Adviser on Management of School-based CPD	30 Oct. 2011	Present

List of Mission members for Curriculum Revision in Mathematics & Science

No.	Name	Title	From	To
1	Hideo IKEDA (Dr.)	Technical Adviser for Science Curriculum	26 April 2013	6 May 2013
2	Takuya BABA (Dr.)	Technical Adviser for Mathematics Curriculum	26 April 2013	6 May 2013
3	Kenji SAITO (Mr.)	Technical Adviser for Mathematics Curriculum	26 April 2013	26 June 2013
4	Keiichi JIBUTSU (Mr.)	Technical Adviser for Science Curriculum	26 April 2013	26 June 2013

Annex 11

as of 4 March 2014

Plan for Capacity Development of Resource Personnel under STEPS Project

Category	Target Group	Strategy (Purpose of Training)	Expected Role after Training	Country trained	Target Number by 2015	Type of Training	Title of Training Course	Target Personnel	Number of trained personnel : Actual/Planned										Achievement of the STEPS 2012-2013
									2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
									← Phase I →			← Phase II →				← Phase III →				
0	Top Managers (target: 3 people / National Level)	To plan future development and expansion of SBCPD through lesson study by preparing Master Plan	*Finalise Master Plan on SBCPD, *Strategise expansion of lesson study	Japan	3	JICA Training Programme (Tailor-made)	0-1. Educational Administration	Permanent Secretary, Directors					3/3							0
I	Core Technical Team Members & National level facilitators (approx. target: 30 people/ National Level)	To develop a team of core personnel who work as national level facilitators for making technical inputs and advice in Math and Science.	*Facilitate National level activities - Nat'l Facilitators W/S, International W/S, Survey on Lesson Analysis etc., *Provide technical advice to other stakeholders, *Develop necessary materials for lesson improvement - Skills books, Journals, lesson monitoring instruments etc. *Monitor lesson and lesson study at schools.	Japan	24 (12)	JICA Training Programme	I-1. Seminar for Math Lesson Evaluation	Core technical personnel for Math.				1/1	2/2	2/2	3/2	2/2	2/2			6
					24 (12)	JICA Training Programme	I-2. Improvement of Lesson Evaluation in Science	Core technical personnel for science						2/2	2/2	3/2	5/2	0/2	0/2	8
					1	JICA Training Programme (Long-term)	I-3. Enhancing the Quality of Primary and Secondary Education in Sub-Saharan Africa	Core technical personnel					1/1							0
					12 (6)	JICA Training Programme (Tailor-made)	I-4. Kyozai-Kenkyu (Math)	Core technical personnel for Math.								6/6		0/6*		6 *same 6 members as 2012.
					12 (6)	JICA Training Programme (Tailor-made)	I-5. Kyozai-Kenkyu (Science)	Core technical personnel for science									6/6		0/6*	6 *same 6 members as 2013.
II	Administrative Personnel (approx. target: 800 people / National, Provincial, District Level)	To upgrade knowledge and skills of administrators and education officers who should support teachers to conduct lesson study activities as school-based CPD especially on the management of school and in-service trainings.	*Facilitate activities related to the Management of school and in-service training at Provincial/District level, *Develop necessary materials on Management to support and enhance lesson study activities of teachers, *Improve school management and activities based on the training experience especially for enhancing teacher development.	Japan	80 (12)	JICA Training Programme	II-1. Improvement of School Management in Sub-Saharan Africa	Administrators & Education Officers		2/2	2/2	2/2	2/2	2/2	2/2					12
					80 (1)	JICA Training Programme	II-2. Secondary Education development	School Administrator				1/1								0
					80 (22)	JICA Training Programme	II-3. INSET Management in Africa	Education Officers at Teacher Education		2/2		1/2	3/2	2/2	1/2	3/3	2/4	0/2	0/2	5
					80 (16)	JICA Training Programme	II-4. Strengthening of Local Education for SMASE-WECSA	Administrators & Education Officers	1/0			2/2	2/2	2/2	0/1	1/2	2/2	0/2	0/2	3
					80 (12)	JICA Training Programme	II-5. Education Administration for reducing Disparities in Basic Education	Administrators for basic education						2/2	1/2	2/2	1/2	0/2	0/2	3
					80 (6)	JICA Training Programme	II-6. Teacher Education for Basic Education of African Countries (8)	Education Officers / RDCs for Basic Education								1/2	1/2	0/2		2
					80 (3)	JICA Training Programme	II-7. School Health	Administrators					1/1	1/1	1/1					0
					80 (2)	JICA Training Programme	II-8. Capacity Development for Research-based Policy Formulation towards Quality Improvement in	Administrators & Researchers							2/2					0
					80 (6)	JICA Training Programme	II-9. Capacity Development for Policy Analysis Using Reserch Results for Education quality Improvement	Administrators & Researchers								1/2	2/2	0/2		3
				Zambia	800 (actual)	Training under SBCPD in Zambia	II-10. Stakeholders Workshop under SBCPD (facilitated by participants for II-1 to 9)	Administrators & Education Officers			300/300	300/300	450/450	600/600	600/600	600/800	400/800	2349/800	0/800	0/800	2749
III	Technical Personnel (approx. target: 600 people / Provincial, District Level)	To improve knowledge and skills on teaching of Mathematics and Science of Lesson study facilitators and core officers for Mathematics and Science, especially on methodology of conducting lessons at classroom.	*Facilitate activities related to the subject contents and teaching methodology at Provincial/District level, *Develop necessary materials on teaching of Mathematics and Science to support teachers and their lesson study at school, *Improve Mathematics and Science lessons at school through practicing what they learn in the training.	Kenya	130	JICA Training Programme	III-1. ASEI/PDSI Approach in Secondary Mathematics & Science	Lesson Study Facilitators & College Lecturers	36/40	47/40		16/10	6/6		6/6	7/6	0/6	0/6		7
				Japan	44 (26)	JICA Training Programme	III-2. Training Program for Young Leaders (Science & Math Education)	Lesson Study Facilitators				4/4	4/4	4/4	3/2	3/3	3/3	0/3	0/3	6
					44 (18)	JICA Training Programme	III-3. Improvement of Teaching Methodology in Primary Science and Mathematics	Lesson Study Facilitators & College Lecturers							2/1	2/2	8/4	0/4	0/4	10
				Malaysia	163 (6)	JICA Training Programme	III-4. Training for Science & Mathematics Educators	Lesson Study Facilitators & College Lecturers				3/3	3/3							0
					163 (3)	JICA Training Programme	III-5. Secondary Science & Mathematics Teacher Educators training for African countries	Lesson Study Facilitators & College Lecturers					3/3							0
					163 (18)	JICA Training Programme	III-6. Interactive Pedagogy for Enhancing Active Teaching and Learning in Secondary/Primary	Lesson Study Facilitators & College Lecturers						12/12	6/6					0
					163 (6)	JICA Training Programme	III-7. Primary Science & Mathematics Teacher Educators training for African countries	Lesson Study Facilitators & College Lecturers							6/6					0
					163 (120)	JICA Training Programme (Tailor-made)	III-8. Customised Course for Zambia - Mathematics and Science Lesson which promote subjective learning	Lesson Study Facilitators & College Lecturers								40/40	32/40	0/32		72
				Zambia	500 (actual) (600)	Training under SBCPD in Zambia	III-9. National Facilitators Workshop under SBCPD (facilitated by participants for III-1 to 8)	Lesson Study Facilitators & College Lecturers					280/250			243/280		0/280		243
					500 (actual) (250)	Training under SBCPD in Zambia	III-10. International Technical Workshop on Problem Solving Lesson (facilitated by participants for	Lesson Study Facilitators & College Lecturers						45/40		0/40	80/50	0/50	0/50	80
IV	Curriculum Officers (approx. target: 12 people / National Level)	To update knowledge and skills of officers on the development of Mathematics and Science curriculum.	*Revise present Zambian curriculum for Mathematics and Science at basic and high school level.	Japan	6	JICA Training Programme (Tailor-made)	IV-1. Curriculum Development in Mathematics	Curriculum specialists & Standards officers						6/6						0
				Malaysia	6	JICA Training Programme	IV-2. Examination Preparation and Curriculum Analysis in Science	Curriculum & Examination officers						6/6						0
V	Depends on the occasion	To have additional inputs to implementers of SBCPD both on management and teaching method	*Share learning in training / seminar with other stakeholders (conduct of following-up activities), *Use experience in training / seminar for the improvement of lesson study and SBCPD, *Suggest plan for improving the activities to the members of core technical team.	Philippines	3	Technical Exchange activity (JICA supported)	V-1. Study visit on learning of Lesson Study at schools	Core Education Officers	3/3											0
				Uganda	20 (8)	JICA Seminar	V-2. Secondary Science and Mathematics Teachers' Programme International Workshop	Education Officers & Lesson Study Facilitators				4/4	4/4							0
					20 (12)	JICA Seminar	V-3. Seminar on Improvement of Science Lesson - Effective use of Experiment	Education Officers & Lesson Study Facilitators							6/6		0/6			0
				Botswana	1	Training done by Botswana government	V-4. ASEI/PDSI Lesson Observation Workshop	College lecturer						1/1						1

ANNEX 12

Counterpart Training in Japan

JFY	Name of Course	From	To	No.	Surname	First names	Disignation	Category	Institution/School	District	Province/Org.
2012	Seminar for Mathematics Lesson Evaluation	22 Aug 2012	15 Sep 2012	1	Likando	Kenneth	SEO-PRESET	NEST	Pre-service Unit	TESS	MESVTEE-HQ
				2	Mwamba Mwale	Lilian	Mathematics Teacher	Teacher	Kansenshi High School	Ndola	Copperbelt
	Improvement of Lesson Evaluation in Science for English-speaking Sub-Saharan African Countires	03 Sep 2012	29 Sep 2012	3	Munyenyembe	Winnie	Lecturer (Science)	College	Mufulira College of	Mufulira	Copperbelt
				4	Kandinda	Benjamin	Science Teacher	Teacher	Hilltop Basic School	Kapiri-Mposhi	Central
				5	Nzala	Skawala	Science Teacher	Teacher	Kafushi High School	Chibombo	Central
	Education Administration for Reducing Disparities in Basic Education	17 Oct 2012	17 Nov 2012	6	Zulu	Kalonde	Assistant DRCC	DEST	DRC-Mpongwe	Mpongwe	Copperbelt
				7	Mulenga	Bright	Subject Coordinator-Basic	PEST	PRC-Ndola	CB Prov.	Copperbelt
	Capacity Development for Policy Analysis Using Research Results and Field Knowledge for Education Quality Improvement	24 Oct 2012	30 Nov 2012	8	Mbuta	Madrine Bbalo	Chief Planning Officer	Other HQ	Planning-HQ	P & I	MESVTEE-HQ
	Teacher Education for Basic Education of African Countries	12 Nov 2012	07 Dec 2012	9	Chiliboyi	Pascalina	Acting SEO	NEST	Pre-service Unit	TESS	MESVTEE-HQ
	Education (Science and Mathematics) for Young Leaders	13 Nov 2012	30 Nov 2012	10	Chiyengi	Wiston Maheka	DRCC	DEST	DRC-Mufumbwe	Mufumbwe	Northwestern
				11	Kapembwa	Given	Teacher	Teacher	Neem Tree Basic	Kabwe	Central
				12	Mpundu	Mwanzabamba	Teacher	Teacher	Ndelela Basic School	Luanshya	Copperbelt
	Methodology of Kyozai-Kenkyu, Mathematics	16 Nov 2012	09 Dec 2012	13	Chilekwa	Grace Kalumba	Principal	College	Mufulira College of Education	Mufulira	Copperbelt
				14	Kolala	Charity	Lecturer (Maths)	College	Solwezi College of Education	Solwezi	Northwestern
				15	Njobvu	Paul	Senior Lecturer (Maths)	College	Mufulira College of Education	Mufulira	Copperbelt
				16	Chisanga	Charles	Acting SEO	NEST	In-service Unit	TESS	MESVTEE-HQ
				17	Machiko	Viston Zacharia	PRCC-High School	PEST	PRC-Serenje	Central Prov.	Central
				18	Moosho	Lisulo	SESO-Maths	PEST	PEO's Office	Central Prov.	Central
	INSET Management in Africa	20 Nov 2012	20 Dec 2012	19	Chingumbe	Kabanda	EO-TE	PEST	PEO's Office	Western Prov.	Western
				20	Koyi	Agness	EO-TE	PEST	PEO's Office	Luapula Prov.	Luapula
				21	Sitali	Ruth Pelekelo	PRCC-High School	PEST	PRC-Livingstone	Southern Prov.	Southern
	Improvement of Teaching Methodology in Primary Science and Mathematics in Sub-Saharan Africa	06 Jan 2013	01 Mar 2013	22	Chibolya	Kindele	Mathematics Teacher	Teacher	Pokola Primary School	Kabompo	Northwestern
				23	Sanyiketo	Raphael Mutekoi	Science Teacher	Teacher	Zambezi Basic School	Zambezi	Northwestern
	Strengthening of Local Education for SMASE-WECSA in Sub-Saharan Africa	14 Jan 2013	09 Feb 2013	24	Simatimbe	Agripa William	EO-TE	PEST	PEO's Office	Lusaka Prov.	Lusaka

2013	Improvement of Teaching Methodology in Primary Science and Mathematics in Sub-Saharan Africa (A)	07 Jul 2013	07 Sep 2013	1	Mwape	Grace	DRCC	DEST	DRC-Nchelenge	Nchelenge	Luapula
				2	Mwape	Cynthia	HoD Maths	Teacher	Limulunga Secondary	Mongu	Western
	Seminar for Mathematics Lesson Evaluation	21 Aug. 2013	14 Sep 2013	3	Chileya	George	SESO-Maths	PEST	PEO's Office	Eastern Prov.	Eastern
				4	Kaliba	Michelo	SESO-Maths	PEST	PEO's Office	Southern Prov.	Southern
	Improvement of Lesson Evaluation in Science for English-speaking Sub-Saharan African Countires	16 Sep 2013	12 Oct 2012	5	Makasa	Amos	Head Teacher	School Manager	Namwala Secondary	Livingstone	Southern
				6	Sefulo	Nyambe	SESO NS	PEST	PEO's Office	Lusaka Prov.	Lusaka
				7	Chibuye	James	DESO	DEST	DEBS	Samfya	Luapula
				8	Ng'ambi	Happy	Head Teacher	School Manager	Mupulungu Sec.	Isoka	Muchinga
				9	Muzumi	Mafenyeho	SESO NS	DEST	PEO's Office	Mongu	Western
	Education Administration for Reducing Disparities in Basic Education	16 Oct. 2013	15 Nov. 2013	10	Kalumba	Jobbicks	PEO	PEST	PEO's Office	Chinsali	Muchinga
	Capacity Development for Policy Analysis Using Research Results and Field Knowledge for Education Quality Improvement	06 Nov 2013	07 Dec 2013	11	Tembo	Bessie	SEO-TRC	NEST	Inservice Unit, HQ	TESS	MESVTEE-HQ
				12	Simukonda	Prisca	PESO-High	Other HQ	Standard and Curriculum-HQ	Standard and Curriculum-HQ	MESVTEE-HQ
	Teacher Education for Basic Education of African Countries (B)	04 Nov 2013	08 Dec 2013	13	Kapila	Victoria	EO-TE	PEST	PEO's Office	Kasama	Northern
	Education (Science and Mathematics) for Young Leaders	18 Nov 2013	05 Dec 2013	14	Chonya	Dorothy	DRCC	DEST	DRC-Isoka	Isoka	Muchinga
				15	Chisango	Chipo	Teacher	Teacher	Twalumba Primary School	Lusaka	Lusaka
				16	Mulako	Ihano	PRCC-High School	PEST	PRC	Lusaka	Lusaka
	Methodology of Kyozai-Kenkyu, Science	8 Oct. 2013	2 Nov. 2013	17	Allan	Lingambe	PESO	PEST	PEO's Office	Northwestern Prov.	Northwestern
				18	Mulenga	Alexander	DEBS	DEST	DEBS	Ndola	Copperbelt
				19	Mudenda	Vincent	Senior Lecturer	College	Nkrumah College of Education	Kabwe	Central
				20	Mumba	Chilufya	SESO Maths/Science	NEST	Standard and Curriculum-HQ	Standard and Curriculum-HQ	MESVTEE-HQ
				21	Kazeze	Esther	PRCC	PEST	PRC-Kabwe	Central Prov.	Central
				22	Kasonde	Emelia	Deputy Head Teacher	School Manager	Kapiri Girls Sec.	Kapiri-Mposhi	Central
	INSET Management in Africa	21 Nov 2013	20 Dec 2013	23	Makoselo	Newton	EO-TE	PEST	PEO's Office	Muchinga Prov.	Muchinga
				24	Chishiko	Stephen	PESO	PEST	PEO's Office	Lusaka Prov.	Lusaka
	Improvement of Teaching Methodology in Primary Science and Mathematics in Sub-Saharan Africa (B)	8th Jan. 2014	8th Mar. 2014	25	Zulu	Aaron Nkhoma	Head Teacher	School Manager	Ilume Primary	Mukushi	Central
				26	Kawina	Esther	Science Teacher	Teacher	Ngungu Primary	Kabwe	Central
				27	Chanda	Virginia	SESO	PEST	PEO's Office	Copperbelt Prov.	Copperbelt
				28	Kaleyo	Aston	Mathematics Teacher	Teacher	St. Marcellins Sec.	Kalulushi	Copperbelt
				29	Mubambe	Francis	Science Teacher	Teacher	Ikelenge Secondary	Ikelenge	Northwestern
				30	Kapinga	Kapulu	Deputy Head Teacher	School Manager	Chitokoloki Primary	Zambezi	Northwestern
	Strengthening of Local Education for SMASE-WECSA in Sub-Saharan Africa	13 Jan. 2014	8 Feb. 2014	31	Mubisi	Loveness	PESO	PEST	PEO's Office	Copperbelt Prov.	Copperbelt
				32	Nachula	Leslie	EO-TE	PEST	PEO's Office	Northwestern Prov.	Northwestern

ANNEX 13:

Participants for Third Country Training

JFY	Country	Name of Course	From	To	No	Surname	First names	Designation	Category	Institution/School	District	Province/Org.
2012	Kenya	ASEI-PDSI approach in Mathematics and Science Education in Africa	########	21 Sep 2012	1	Nshenda	Beatus	DESO	DEST	DEBS' Office	Mpolokoso	Northern
					2	Malama	Patrick Frank	SESO-Maths	PEST	PEO's Office	Luapula Prov.	Luapula
					3	Namangolwa	Paul Namukolo	Subject Coordinator-High	PEST	Mongu PRC	Western Prov.	Western
					4	Chawinga	Peter Masauso	Science Teacher	Teacher	Kamulanga High School	Lusaka	Lusaka
					5	Mukelabai	Akabewe Phaine	Science Teacher	Teacher	Hillside Girls' High School	Chipata	Eastern
					6	Sichone	Maelan	Science Teacher	Teacher	Chinsali Girls High School	Chinsali	Muchinga
					7	Simwatachela	Hyden	Science Teacher	Teacher	Hillcrest High School	Livingstone	Southern
	Malaysia	Enhancing Subjective Learning in the Secondary Science and Mathematics Classroom	#########	01 Feb 2013	1	Chanda	Lewis		DEST	DEBS' Office	Mporokoso	Northern
					2	Lubasi	Felix Nawa	DRCC	DEST	Kaoma DRC	Kaoma	Western
					3	Malambo	Milimo Luckson	PEO-PRESET	NEST	Pre-service Unit	TESS	MESVTEE-HQ
					4	Mumba	Chilufya	SESO-Maths&Science	NEST	Standards-HQ	S & C	MESVTEE-HQ
					5	Mutale	Lazarous	Senior Curriculum Specialist	NEST	Curriculum Develop Centre	S & C	MESVTEE-HQ
					6	Mubiana	Muta	PRCC	PEST	Mongu PRC	Mongu	Western
					7	Kasondo	Emelia Kenda	Head Teacher	School Manager	Palmeades Basic School	Kapiri-Mposhi	Central
					8	Chimoka	Edith Nyamayawo My	Science Teacher	Teacher	David Livingstone Secondary School	Livingstone	Southern
					9	Chisala	Christpine	Science Teacher	Teacher	Lundazi Boarding Secondary School	Lundazi	Eastern
					10	Chooka	Mazabuka	Mathematics Teacher	Teacher	Naboye Secondary School	Kafue	Lusaka
					11	Daka	Hildah Phiri	Mathematics Teacher	Teacher	St. Clements Secondary School	Mansa	Luapula
					12	Hakalima	Jean	Mathematics Teacher	Teacher	Chipata Day Secondary School	Chipata	Eastern
					13	Hakasenke	Jimmy Jameson	Science Teacher	Teacher	Muchinshi Secondary School	Chingola	Copperbelt
					14	Kabaso	Misheck	Mathematics Teacher	Teacher	Mudenda Basic School	Chingola	Copperbelt
					15	Kasondo	Daniel	Science Teacher	Teacher	Thondele Basic School	Mafinga	Muchinga
					16	Kasopo	Jekapo	Mathematics Teacher	Teacher	Mukinge Girls Secondary School	Kasempa	Northwestern
					17	Katayi	Judith	Science Teacher	Teacher	Lubwe Girls Secondary School	Samfya	Luapula
					18	Monyika	Ventiuess	Mathematics Teacher	Teacher	Chibombo Secondary School	Chibombo	Central
					19	Mate	Namakau	Science Teacher	Teacher	Senanga Secondary School	Senanga	Western
					20	Mbewe	Samson	Mathematics Teacher	Teacher	Kasama Boys Secondary School	Kasama	Northern
					21	Mbilikita	Joseph Kabinga	Science Teacher	Teacher	Chavuma Secondary School	Chavuma	Northwestern
					22	Muchindu	Cliff Belemu	Science Teacher	Teacher	Canisius Secondary School	Monze	Southern
					23	Mukela	Varien Mulombwo	Science Teacher	Teacher	Kambule Secondary School	Mongu	Western
					24	Mukuta	Misheck	Science Teacher	Teacher	Serenje Boma Basic School	Serenje	Central
					25	Mulenga	Victoria	Science Teacher	Teacher	Isoka Boys Secondary School	Isoka	Muchinga
					26	Muloji	Ishimeli Jonathan	Mathematics Teacher	Teacher	Ng'oma Secondary School	Kawambwa	Luapula
					27	Mumbi	Katayi	Science Teacher	Teacher	Chongwe Secondary School	Chongwe	Lusaka
					28	Munga	Rosford	Mathematics Teacher	Teacher	Hillside Girls Secondary School	Chipata	Eastern
					29	Mutale	Esnart	Science Teacher	Teacher	Luwingu Secondary School	Luwingu	Northern
					30	Mutale	Ivor	Science Teacher	Teacher	Nchelenge Secondary School	Nchelenge	Luapula
					31	Mwale	Belvin	Mathematics Teacher	Teacher	Mungwi Secondary School	Mungwi	Northern
					32	Mwale	John	Science Teacher	Teacher	Chasa Secondary School	Petauke	Eastern
					33	Nakawala	Mildred	Mathematics Teacher	Teacher	Chinsali Basic School	Chinsali	Muchinga
					34	Nalubamba	Rex Chooye	Mathematics Teacher	Teacher	Namwala Secondary School	Namwala	Southern
					35	Namayanga	Clara Kosamu	Science Teacher	Teacher	Lusaka Secondary School	Lusaka	Lusaka
					36	Nsama	Agness Kunwonda	Science Teacher	Teacher	Helion Kaunda Girls Secondary School	Kitwe	Copperbelt
					37	Sinkaboya	Bronda	Mathematics Teacher	Teacher	Jonathan Sim Secondary School	Kalomo	Southern
					38	Simsanya	Chalwa	Science Teacher	Teacher	Ikelenge Secondary School	Ikelenge	Northwestern
					39	Simuchile	April	Mathematics Teacher	Teacher	Mpika Boys Secondary School	Mpika	Muchinga
					40	Simuchimba	Norah	Mathematics Teacher	Teacher	Munali Girls Secondary School	Lusaka	Lusaka
2013	Malaysia	Enhancing Subjective Learning in the Secondary Science and Mathematics Classroom	#########	02 Mar 2014	1	Kanda	Lewis	Science Teacher	Teacher	Nkumbi Basic (Secondary)	Mukushi	Central
					2	Musukwa	Oscar	Mathematics Teacher	Teacher	Matuku Secondary,	Mukushi	Central
					3	Kalinga	Flair	Science Teacher (HoD)	School Manager	Mumbwa Secondary	Mumbwa	Central
					4	Muyendekwa	Victor	Science Teacher (HoD)	School Manager	Lufwanyama Secondary	Lufwanyama	Copperbelt
					5	Chewe	Abraham Mukuka	Mathematics Teacher	Teacher	Kantanshi Secondary	Mufulira	Copperbelt
					6	Nakazwe	Tamina	Mathematics Teacher	Teacher	Chifubu Secondary	Ndola	Copperbelt
					7	Kasoka	Chinyemba	Science Teacher	Teacher	Zambezi Boarding Secondary	Zambezi	Northwestern
					8	Kapelang'a	Allan	Mathematics Teacher	Teacher	Sikufele Secondary	Manyinga	Northwestern
					9	Mwelwa	Samson	Science Teacher	Teacher	Pokola Day Secondary	Kabompo	Northwestern
					10	Mwang'andu	Himiiti	Science Teacher	Teacher	Luwinga Secondary	Luwinga	Northern
					11	Siebinga	Joe	Science Teacher (HoD)	School Manager	St John's Secondary	Kasama	Northern
					12	Nshindano	Daniel	Mathematics Teacher (HoD)	School Manager	Mporokoso Secondary	Mporokoso	Northern
					13	Sikapulanga	Elisha	Mathematics Teacher (HoD)	School Manager	Chadiza Day Secondary	Chadiza	Eastern
					14	Mvula	Sylvester Wedwell	Science Teacher (HoD)	School Manager	Chadiza Day Secondary	Chadiza	Eastern
					15	Mbewe	Esau	Mathematics Teacher (HoD)	School Manager	Lundazi Day Secondary	Lundazi	Eastern
					16	Moomba	Pisani Flint	Science Teacher (HoD)	School Manager	Choma Day Secondary	Choma	Southern
					17	Hangoma	Edgar	Mathematics Teacher (HoD)	School Manager	Monze Boarding Secondary	Monze	Southern
					18	Hachimbi	Hachipuka Brenda	Mathematics Teacher	Teacher	Mbabula Secondary	Choma	Southern
					19	Museli	Nawa	Mathematics Teacher (HoD)	School Manager	Mangango Secondary	Kaoma	Western
					20	Munalula	Sepiso Mary	Mathematics Teacher	Teacher	Kambule Secondary	Mongu	Western
					21	Chaluda	Suko Chinyama	Science Teacher	Teacher	Matauka Secondary	Senanga	Western
					22	Yuma	Muchenga Dudu	Science Teacher	Teacher	Luanga Secondary	Luanga	Lusaka
					23	Libuku	Mukau	Science Teacher (HoD)	School Manager	Mwembeshi Secondary	Mwembeshi	Lusaka
					24	Kasaro	Russell	Mathematics Teacher	Teacher	Chongwe Secondary	Chongwe	Lusaka
					25	Chanda	Fridah Mwebesheni	Deputy Head (Math)	School Manager	Minpani Secondary	Nchelenge	Luapula
					26	Chama	Kasongo	Science Teacher	Teacher	Mununga Secondary	Mununga	Luapula
					27	Mwila	Hildah	Science Teacher	Teacher	St Marys Secondary	Kawambwa	Luapula
					28	Makonde	Justin	PRCC-Science	PRCC	Provincial Resource Centre	Chinsali	Muchinga
					29	Mudenda	Barbara	Mathematics Teacher	Teacher	Nakonde Secondary	Nakonde	Muchinga
					30	Kakwende	Janet	Science Teacher	Teacher	Chama Basic (Secondary)	Chama	Muchinga
					31	Chiliboyi	Pascalina	SEO (Math)	NEST	HQ, Senior Education Officer	TESS	HQ
					32	Chulu	Lewis	Vice President (Science)	College	Charles Lwanga College of Education	TESS	HQ

ANNEX 14:

Technical Exchange Program in Other Countries

JFY	Venue	Name of Course	From	To	No.	Name of Participants	Present Position	Institution/School	Province/Org.
2011	Uganda	UGANDA 3rd INTERNATIONAL WORKSHOP SPECIAL SEMINAR FOR SCIENCE LESSON IMPROVEMENT	20-Feb-12	24-Feb-12	1	Richard Singoyi	Provincial Resource Center	PRC Kabwe	Centre
					2	Joshua Mande	Head of Department, Science, Munkonchi High School, Central Province	Munkonchi high	Centre
					3	Davy Kalemba	District Resource Centre Coordinator, Kabompo District Resouce Centre	DRCC Kabompo	North Western
					4	Micheal Chiyaka	Science Teacher, Zambezi Boarding	Zambezi Boarding	North Western
					5	Joseph Musonda	Science teacher, Muleya High, Facilitator in PSA and ASEI	Education Standard Officer at Provincial Education Office	Copperbelt
					6	John Tebeka	Lecturer in science at Mufulira College	Lecturer in science at Muce	Copperbelt
					7	Edward Tindi	JICA Local Consultant	TESS	HQ
					8	Kazuyoshi Nakai	JICA Chief Adviser, STEPS Project	TESS	HQ

Visit to Zambia from Other Countries

2012	Zambia	Burundi & SMASSE Malawi Technical Exchange Visit to Zambia	23-Sep-12	29-Sep-12	1	Hilaire BARANSHARITSE	Advisor for secondary education	program office(BEPES)	Burundi
					2	Rita SIBOMANA	Inspector for secondary education program	Ministry of primary and secondary education	Burundi
					3	Félix MPOZERINIGA	Advisor for the Cabinet	Ministry of primary and secondary education	Burundi
					4	Firmin VYUMVUHORE	Principal	Sainte Famille secondary school	Burundi
					5	Alexandre BARAKIKANA	Teacher	Gisenyi secondary school	Burundi
					6	Philippe NDIKUMANA	Teacher	Reine de la Paix secondary	Burundi
					7	Akiko MIYASHITA	JICA Project Formulation Advisor	JICA Burundi	Burundi
					1	Raphael ZG Agabu	Director	Directorate of Inspection and Advisory services (DIAS)	Malawi
					2	Mary Soko	Assistant Director	DIAS	Malawi
					3	Melayi Kapunda (Banda)	Director	Directorate of Secondary Education	Malawi
					4	Ernest Matengo	Inspector	Central West Education Division	Malawi

ANNEX 15:

Participants of the 3rd SMASE WECSA International Technical WS in Zambia

	Country	Sex	Family Name	First Name	Middle Name	Current Position	Place of Work
1	Angola	Mr.	Mesquita	Alfonso	Alves Bravo de	Teacher and National Senior Trainer	Ministry of Education
2	Benin	Mr.	Padonou Nobime	Aime Comlan		Head of Secondary School	Ministry of National Languages and Literacy
3	Botswana	Mr.	Jabane	Thatayaone		INSET Officer	Department of Training and Development
4	Botswana	Ms.	Kotlhao	Kate		Senior Lecturer I-Chemistry	Molepolole College of Education
5	Botswana	Ms.	Sithole	Onalenna	Kutlwano	Senior Lecturer II	Nanogang C.J.S.S
6	Burkina Faso	Mr.	Bamogo	Edouard		Researcher	Ministry of National Education and Literacy
7	Burundi	Mr.	Vyumvuhore	Firmin		Headteacher-Secondary School	Ministry of Basic, Secondary and Technical Education, Vocational Training and Literacy
8	Cameroon	Mr.	Vukwusi	John	Mbi	National Pedagogic Inspector for Chemistry	Ministry of Secondary Education
9	Cameroon	Ms.	Egbe epse	Helen	Ntoh	National Pedagogic Inspector for Biology	Ministry of Secondary Education
10	Cameroon	Ms.	epse Babila	Emilia	Ghogomu	National Pedagogic Inspector for Maths	Ministry of Secondary Education
11	Ethiopia	Mr.	Cheru	Eshetu	Asfaw	National SMASEE Coordinator	Ministry of Education
12	Ethiopia	Mr.	Baffa	Tesfaye	Jinore	Chemistry National Trainer	Ministry of Education
13	Ethiopia	Mr.	Woldegebriel	Tekalgn	Gebreslase	Primary School Biology Teacher	Addis Ababa Education Bureau
14	Gambia	Mr.	Joof	Babou		Senior Education Officer	Ministry of Basic and Secondary Education
15	Gambia	Mr.	Jallow	Momodou	A.	Senior Lecturer	Gambia College School of Education
16	Gambia	Ms.	Kongira	Kumba		Classroom Teacher	Ministry of Basic and Secondary Education
17	Ghana	Ms.	Adobor	Rosina		Deputy Director of Education/ Deputy Coordinator INSET	Ghana Education Service
18	Ghana	Mr.	Nsafoah	Francis		Teacher Educator	Ghana Education Service
19	Ghana	Mr.	Sarpong	Terah	Adofo	Classroom Teacher	Ghana Education Service
20	Kenya	Ms.	Thiongo	Margaret	Wairimu	Director Field and Other Services	Ministry of Education
21	Kenya	Mr.	Kilonzo	Benjamin	Muia	Head of Department - Chemistry	CEMASTEA
22	Kenya	Ms.	Mwihoti	Nancy	Muchera	Ruthimitu Girls High School	Teachers Service Commission
23	Lesotho	Ms.	Kalake	Matsitso	Lomile	Science Advisor	Ministry of Education and Training
24	Lesotho	Mr.	Nts'ekhe	Nts'ekhe	Joseph	Classroom Teacher	Khethisa High School
25	Mali	Mr.	Diarra	Cheick	Fanta Mady	Formulateur desenseigments	Ministry of Education and Literacy
26	Malawi	Ms.	Mbewe	Darles	Zamose	Acting Director	Ministry of Education, Science and Technology
27	Malawi	Mr.	Mpaso	Cedrick	Nthyolamwendo	National Trainer	Ministry of Education, Science and Technology
28	Malawi	Ms.	Mkandawire	Jessie		Secondary School Teacher	Ministry of Education, Science and Technology
29	Namibia	Ms.	Kapenda	Loide	Ndakondjelwa	Senior Education Officer	Ministry of Education
30	Namibia	Ms.	Angula	Alina	Hambelela	Education Officer	Ministry of Education
31	Namibia	Ms.	Shiindi	Rosina		Classroom Teacher	Oshikunde Combined School
32	Niger	Ms.	Ouattara	Mariama	Oumarou	Head of Mathematics National Trainer of SMASSE Niger	SMASSE Niger
33	Nigeria	Mr.	Mohammed	Abubakar	Ibrahim	Senior Education Officer	National Teachers Institute
34	Nigeria	Ms.	Kambut	Na'omi	Dazam	Teaching	Plateau State Universal Basic Education
35	Nigeria	Mr.	Musa	Dauda	Akabu	Teaching	Kogi Local Government Education Authority
36	Rwanda	Mr.	Musabe	Jules Simon		Science Teacher Training Officer	Rwanda Education Board
37	Rwanda	Mr.	Akili	Jean Claude		National Trainer and Physics Teacher	Ministry of Education
38	Rwanda	Ms.	Umuhoza Ndinda	Delphine		Primary Science Teacher	Ministry of Education
39	Senegal	Mr.	Diop	Alioune	Badara	National Team SMASE Project Coordinator	Ministry of Education
40	Sierra Leone	Ms.	Gorvie	Musu	Melynda	Dep. Director, Higher Education, Science and Technology	Ministry of Education, Science and Technology
41	Sierra Leone	Mr.	Bassie	Jinnah	Jonathan	National Trainer-Mathematics	Ministry of Education, Science and Technology
42	Sierra Leone	Mr.	Kargbo	Alpha	Bangs	Teacher of Mathematics & Science	Northern Polytechnic
43	South Sudan	Mr.	Maame	Edward Kokole		Director for Teacher Education	Ministry of General Education and Instruction
44	South Sudan	Mr.	Woja	Diliga	Biyo	National SMASESS Coordinator	Ministry of General Education and Instruction
45	South Sudan	Mr.	Oyul	Otto	Thomas	Teaching Assistant	Ministry of General Education and Instruction
46	Swaziland	Ms.	Ndlela	Florence	Ntombifuthi	Regional Inspector of Schools (Science)	Ministry of Education
47	Swaziland	Mr.	Khumalo	Marwick Sizwe		Senior Lecturer	Ministry of Education
48	Swaziland	Mr.	Nkambule	Nkosinathi		Teacher	St. Michael's High School
49	Tanzania	Ms.	Baitilwake	Marcelina	Aloyce	School Inspector	Ministry of Education and Vocational Training

50	Tanzania	Mr.	Mtelesi	Fixon	Eliot	Chemistry Teacher, Regional Facilitator	Ministry of Education and Vocational Training
51	Tanzania	Ms.	Buberwa	Melania	Isack	Teacher	Bukoba Secondary
52	Uganda	Ms.	Ntete	Mary		Senior Education Officer	Ministry of Education and Sports
53	Uganda	Mr.	Mudde	Moses Ronald		National Trainer	Kololo Secondary School
54	Uganda	Mr.	Baguma	Julius	Karubanga	Regional Trainer and Classroom Teacher	Ministry of Education and Sports
55	Zambia	Ms.	Chikalekale	Florence	Mwindula	PESO - Policy Director	Ministry of Education, Science, Vocation Training and Early Education
56	Zambia	Mr.	Mudenda	Vincent	Siamulandabala	Teacher Educator/Trainer	Nkrumah College of Education
57	Zambia	Mr.	Mwale	Hussein		Teacher Natural Sciences	Mine Secondary School
58	Zanzibar	Mr.	Khamis	Said	Seif	Head of NTRC	Ministry of Education and Vocational Training
59	Zanzibar	Mr.	Ramadhan	Hussein	Iddi	Subject Advisor	Ministry of Education and Vocational Training
60	Zanzibar	Ms.	Ali	Jina	Msena	Biology Teacher	Nyerere Secondary School
61	Zimbabwe	Mr.	Chiota	Christopher		Deputy Director	Ministry of Education
62	Zimbabwe	Ms.	Matanhire	Rosemary	Tafadzwa	Science Teacher, Facilitator In-Service Training	Ministry of Education
63	Zimbabwe	Mr.	Rwanga	Carthbert		Teacher Examiner	Ministry of Education

SMASE WECSA EXECUTIVE

1	Zambia	Mr.	Tindi	Edward		Chairperson, SMASE WECSA Association	
2	Mozambique	Ms.	Fagilde	Sarifa	M. A.	Scientific Director/ Vice-Chairperson SMASE WECSA Association	Pedagogical University
3	Senegal	Mr.	Faye	Adama		Chef du Bureau Suivi des Projects de l'Education/ Vice-Chairperson SMASE WECSA Association	Ministere de l'Education
4	Kenya	Mr.	Matachi	Atsushi		JICA Expert, Chief Advisor SMASE Project/ Treasurer SMASE WECSA Association	
5	Kenya	Mr.	Kawa	Moses	Otieno	Director, CEMASTEA/ Executive Secretary SMASE WECSA Association	CEMASTEA

SMASE WECSA SECRETARIAT

1	Kenya	Mr.	Nakajima	Motoe		JICA Expert, Deputy Chief Advisor, SMASE Project	
2	Kenya	Mr.	Tanaka	Noriaki		JICA Expert, Project Coordinator, SMASE Project	
3	Kenya	Ms.	Marete	Jane		Administrator, SMASE INSET Unit/SMASE WECSA Association	
4	Kenya	Mr.	Aluma	Patrick		Coordinator, Research and Development, CEMASTEA	CEMASTEA
5	Kenya	Ms.	Kariuki	Mary		National Trainer Biology Department, CEMASTEA	CEMASTEA
6	Kenya	Mr.	Makanda	John	Livingstone	National Trainer Mathematics Department, CEMASTEA	CEMASTEA
7	Kenya	Mr.	Ogwel	Joseph	Carilus Ateng	National Trainer Physics Department, CEMASTEA	CEMASTEA

JICA

1	Burkina Faso	Ms.	Kinoshita	Akiko		JICA Project Coordinator	
2	Cameroon	Ms.	Kuwahata	Mitsuko		JICA Project Coordinator	
3	Kenya	Mr.	Kimani	Samuel	Kibe	Education Consultant	
4	Rwanda	Mr.	Murayama	Tetsuya		School Based Collaborative Teacher Training Project (SBCT) Expert	
5	Senegal	Mr.	Miyazaki	Takeshi		JICA Expert	
6	Senegal	Mr.	Onuma	Masato		JICA Project Formulation Advisor	
7	Tanzania	Ms.	Sato	Miyako			
8	Tanzania	Mr.	Msuya	Mariango		Education Specialist	
9	Tanzania	Ms.	Mwakijinja	Zuhura		Education Specialist	
10	Tanzania	Ms.	Shirima	Catherine		JICA, Tanzania	

Zambian Participants and Secretary

1	Zambia	Mr.	Nkosha	Chishimba		Permanent Secretary	Ministry HQ
2	Zambia	Ms.	Mayondi	J.		Deputy Permanent Secretary	Ministry HQ
3	Zambia	Mr.	Banda	Benson		PEO	National Science Centre – TESS, Ministry HQ
4	Zambia	Ms.	Mwiya	Mercy		PEO	Inservice Unit – TESS, Ministry HQ
5	Zambia	Ms.	Tembo	Bessie		SEO - TRCs	Inservice Unit – Ministry HQ
6	Zambia	Mr.	Lingambe	Allan		PESO	Northwestern Province
7	Zambia	Ms.	Chilekwa	Grace		Principal	Mufulira College of Education
8	Zambia	Mr.	Machiko	Viston		Subject Coordinator	Central Province
9	Zambia	Mr.	Nakai	Kazuyoshi		Chief Advisor	STEPS Project

10	Zambia	Mr.	Saikawa	Shuhei		Technical Advisor	STEPS Project
11	Zambia	Ms.	Yamada	Kyoko		Technical Advisor	STEPS Project
12	Zambia	Ms.	Hama	Yoshire		Technical Advisor	Directorate of Planning & Information
13	Zambia	Mr.	Simutowe	Humphrey		SESO - Maths	Lusaka Province
14	Zambia	Mr.	Bernard	Kakumbi		SESO – Natural Sciences	Eastern Province
15	Zambia	Mr.	Chileshe	John		Snr Consultant – Education Sector	JICA , Zambia Office
16	Zambia	Mr.	Moosho.	Lisulo		SESO - Maths	Central Province
17	Zambia	Mr.	Chulu	Lewis		SESO – Natural Sciences	Southern Province
18	Zambia	Ms.	Kazeze	Esther		Subject Coordinator – HS	Central Province
19	Zambia	Mr.	Kasheta	Borniface		Head Teacher	Moomba Primary School
20	Zambia	Mr.	Singoyi	Richard		Subject Coordinator - Bs	Central Province
21	Zambia	Ms.	Twelasi	Rebecca		Technical Officer	National Science Centre – TESS Ministry HQ
22	Zambia	Mr.	Mambwe	Borniface		Technical Officerf	National Science Centre – TESS – Ministry HQ
23	Zambia	Mr.	Nakasamu	Thomas		Accounts assistant	National Science Centre, TESS, Ministry HQ
24	Zambia	Mr.	Banda	Simon		Accounts Assistant	TESS, Ministryb HQ
25	Zambia	Ms.	Kaoma	Felistus		Secretariat	National Science Centre, Ministry HQ
26	Zambia	Ms.	Gondwe	Harriet		Secretary	National Science Centre, TESS, Ministry HQ
27	Zambia	Ms.	Ulaya	Shirely		Secretary	Teacher Education, Ministry HQ
28	Zambia	Ms.	Mushambatwa	Inutu		Public Relations Officer	Ministry HQ
29	Zambia	Ms.	Mweenda	Purity		Executive Officer	TESS, Minisry HQ
30	Zambia	Ms.	Nyambe	Mebelo M		PESO	Western Province
31	Zambia	Mr.	Chingumbe	Richard		EO – Teacher Education	Western Province
32	Zambia	Ms.	Unyenya	Martha		Teacher	Southern Province
33	Zambia	Ms.	Chimoka	Edith Nyamayawo		Teacher	Southern Province
34	Zambia	Mr.	Mulenga	Sylvester		SESO – Natural Sciences	Northwestern Province
35	Zambia	Ms.	Lukama	Leslie		EO – Teacher Education	Northwestern Province
36	Zambia	Mr.	Kapyololo	Rodgers		DESO	Northwestern Province
37	Zambia	Mr.	Ng'ambi	Happy		Headteacher	Northern Province
38	Zambia	Mr.	Siame	Changala		SESO -- Natural SCiences	Northern Province
39	Zambia	Mr.	Mulenga	Martin		Teacher	Muchinga Province
40	Zambia	Mr.	Kaira	Haskings		SESO – Maths	Muchinga Province
41	Zambia	Mr.	Makoselo	Newton		EO -- Teacher Education	Muchinga Province
42	Zambia	Mr.	Moonga	Anccetus		Teacher	Lusaka Province
43	Zambia	Mr.	Chinyama	Chipo S		Teacher	Lusaka Province
44	Zambia	Mr.	Nyambe	Sefulo		SESO – Natural Sciences	Lusaka Province
45	Zambia	Mr.	Chimba	Bernard		Teacher	Luapula Province
46	Zambia	Ms.	Bwalya	Annie Phiri		DEBS	Luapula Province
47	Zambia	Ms.	Mumba	Chilufya		SESO – Maths /Science	Ministry HQ
48	Zambia	Ms.	Mvula	Ruth		SEO	Preservice, TESS, Ministry HQ
49	Zambia	Mr.	Mutale	Lazarus		Senior Curriculum Specialist - Maths	CDC – Ministry HQ
50	Zambia	Mr.	Malambo	Luckson		PEO -	Preservice, TESS, Ministry HQ
51	Zambia	Mr.	Chisanga	Anthony		SEO – High Schs	Inservice, TESS, Ministry HQ
52	Zambia	Ms.	Manda	Florence		Lecturer	Chipata College of Education, Eastern Province
53	Zambia	Mr.	Chileya	George		SESO - Maths	Eastern Province
54	Zambia	Ms.	Thole	Venus		EO – Teacher Education	Eastern Province
55	Zambia	Mr.	Mapanda	Hazel		Headteacher	Copperbelt Province
56	Zambia	Mr.	Nyondo	Patrick		Subject Coordinator	Copperbelt Province
57	Zambia	Ms.	Mubisi	Lovencss		PESO	Copperbelt Province
58	Zambia	Ms.	Chewe	Stella Chanda		DRCC	Copperbelt
59	Zambia	Ms.	Kasonde	Emelia		Headteacher	Central Province
60	Zambia	Ms.	Kapanga	Kelly		DRCC	Central Province
61	Zambia	Ms.	Sikazwe	Lydia		DRCC	Central Province

ANNEX 16

List of Machinery and Equipment Provided by JICA

Place	JFY	Equipment	Manufacturer / Model Number	Unit Cost (ZMW)
HQ	11/9/2011	Vehicle	Mitsubishi Pajero 2800/S/Wagon/ALD3656	295,317.00
HQ	11/9/2011	Vehicle	Mitsubishi Pajero 2800/S/WAGON/ALD3658	295,317.00
HQ	12/2/2011	Laptop Computer	HP Pavillion DV6-6120us	6,592.00
HQ	12/2/2011	Laptop Computer	HP Pavillion DV6-6120us	6,592.00
HQ	1/12/2012	Vehicle	Mitsubishi Pajero/ALD8521	205,200.00
HQ	2/2/2012	Video Camera	Sony HDR-CX130	3,043.00
HQ	2/2/2012	Video Camera	Sony HDR-CX130	3,043.00
HQ	2/2/2012	Video Camera	Sony HDR-CX130	3,043.00
HQ	2/16/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
HQ	2/16/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
HQ	2/16/2012	Laptop Computer	HP Powerbool 4530s	5,835.00
HQ	7/13/2012	Projector	Epson Powerlite S11/X12	4,655.00
HQ	7/13/2012	Projector	Epson Powerlite S11/X12	4,655.00
HQ	10/15/2012	Video Camera	Sony HDR-PJ260E	5,732.00
HQ	10/15/2012	Video Camera	Sony HDR-PJ260E	5,732.00
HQ	10/15/2012	Video Camera	Sony HDR-PJ260E	5,732.00
Eastern	12/2/2011	Vehicle	FORD RANGER 2500/P/UP/ALD3652	145,750.00
Eastern	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Eastern	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Eastern	8/10/2012	Video Camera	Sony HDR-CX210	3,232.00
Western	12/2/2011	Vehicle	FORD RANGER 2500/P/UP/ALD3651	145,750.00
Western	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Western	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Western	8/10/2012	Video Camera	Sony HDR-CX210	3,232.00
Southern	12/2/2011	Vehicle	FORD RANGER 2500/P/UP/ALD3653	145,750.00
Southern	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Southern	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Southern	3/7/2012	Video Camera	SAMSUNG HMX-H300BP	2,237.00
Northern	12/2/2011	Vehicle	FORD RANGER 2500/P/UP/ALD4405	145,750.00
Northern	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Northern	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Northern	3/7/2012	Video Camera	SAMSUNG HMX-H300BP	2,237.00
Lusaka	12/2/2011	Vehicle	FORD RANGER 2500/P/UP/ALD3650	145,750.00
Lusaka	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Lusaka	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Lusaka	8/10/2012	Video Camera	Sony HDR-CX210	3,232.00
Luapula	12/2/2011	Vehicle	FORD RANGER 2500/P/UP/ALD3655	145,750.00
Luapula	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Luapula	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Luapula	3/7/2012	Video Camera	SAMSUNG HMX-H300BP	2,237.00
Muchinga	3/28/2012	Vehicle	Nissan Double Cab / ALE5710	137,500.00
Muchinga	3/15/2012	Projector	Epson Powerlite S12	4,714.00
Muchinga	3/15/2012	Laptop Computer	HP Pavilliong6-1b35ca	5,835.00
Muchinga	8/10/2012	Video Camera	Sony HDR-CX210	3,232.00

Total in Zambian Kwacha (ZMW) 1,967,640.00

Total in Japanese Yen ¥35,210,400

ANNEX17: Recommended modification of the indicators

Overall Goal

Original PDM	Issues observed	Recommendations
Result of lesson observation (Science and Mathematics) (students' activities)	No target figureshave been set. Under Overall evaluation, L1 and L2 score lowest among four indicators. Various efforts and inputs (overseas training) are put into the enhancement of subjective learning (L2). Thus it is worthwhile to set target in this area.	Set the target figures immediately after the Mid-term Review at least for indicators that show the extent of subjective learning, namely, Overall Evaluation (L2) as well as L-2 (Quality of Learning), PART C: Observing – Learning of Pupils in a Delivered Lesson in the "Baseline instrument for teachers"as follows: For the 3 Mentor Provinces: (Page numbers in the brackets below refer to those of the Baseline Survey Report) Baseline Endline L2 (p.23) 1.9 2.2 L-2 (p.26) 1.16 1.4 For the 7 New Provinces: Baseline Endline L2 (p.23) 1.6 1.8 L-2(p.26) 1.04 1.2
Students'perception towards their learning	No targetfigures have been set.	Set the target figures immediately after the Mid-term Review at least for indicators that show the extent of subjective learning, namely, L-2(Question 7-11) and L3 (Question 12-18) in the "Baseline instrument for pupils"as follows: For the 3 Mentor Provinces: Baseline Endline L-2(p.27) 1.58 1.7 L-3 (p.27) 1.48 1.6 For the 7 New Provinces: Baseline Endline L-2 (p.27) 1.58 1.7 L-3 (p.27) 1.45 1.6

Project Purpose

Original PDM	Issues observed	Recommendations
Result of lesson observation (Science and Mathematics) (demonstration of teaching skills)	No target figures have been set. Various efforts and inputs (overseas training) are put into the enhancement of subjective learning. Thus it is worthwhile to set target in this area for three mentoring provinces.	Set the target figures for the three mentoring provinces immediately after the Mid-term Review at least for indicators that show the extent of subjective learning, namely,P-3 (Considering Pupils) and D-2 (Ability of Enhancing Pupils' Subjective Learning) in the "Baseline instrument for Teachers" as follows: For the 3 Mentor Provinces: Baseline Endline P-3 (p.24) 1.27 1.5 D-2 (p.25) 1.15 1.3 For the 7 New Provinces: Baseline Endline P-3 (p.24) 1.09 1.27 D-2 (p.25) 1.03 1.15
Self-evaluation of teachers in teaching skills	No data has been obtained in the baseline survey as well as the Mid-term review.	Develop a questionnaire for teachers that checks whether their teaching skills are enhanced.
Students' evaluation teaching	No target figureshave been set.	Set target figures immediately after the Mid-term Review for L-1 (Extent of Attainment) in the Format for Assessing Learning of Pupils as follows: Baseline Endline L-1 1.49 1.55

Output1

Original PDM	Issue observed	Recommendations
%of schools implementing lesson study	Current target (70%) does not take into consideration the difference between three mentoring provinces and new seven provinces.	Set different target figures for3 Mentor Provinces and 7 New Provinces for the indicator (i) of Output 1 that measure quantitative expansion of lesson study as follows:

	Thus, different target figures for three mentoring provinces and new seven provinces, respectively,areneeded.	For 3 mentoringprovinces (average): Mid-term Endline 86.5% 90 % For 7 new provinces (average): Mid-term Endline 37% 50%
Quality of lesson study verified through a prepared check list	A tool developed so far seems to check whether the intended procedure for Lesson Study tofollow.	Revise the tool in such a way that it captures the quality of lesson study (the extent of subjective learning). After items added to the questionnaire have confirmed, set target figures.

Output2

Original PDM	Issue observed	Recommendations
Self-evaluation of resource persons on their performance	No data have been obtained for the baseline survey as well as for the Mid-term review.	-Develop a questionnaire that asks resource persons (KK team, facilitators at PEST and DEST) to evaluate themselves on their performance. -For KK team, a booklet of Kyozai-Kenkyu that shows the extent of capacity building can be set as one of the indicators.
Evaluation of resource persons by beneficiaries	No data have been obtained for the baseline survey as well as for the Mid-term review	-Develop a questionnaire that asks beneficiaries to evaluate resource persons. There are two cases; evaluation of core technical team by facilitators; and evaluation of facilitators by teachers.

Output3

Original PDM	Issue observed	Recommendations
Availability of developed reference materials in schools	Data have not been obtained as to whether developed reference materials are available in schools.	-Develop a questionnaire that asks whether these reference materials (teaching skills book, management skills book, implementation guideline) are available. At least for implementation guideline, 90% of school surveyed should have this.

		All provinces (average) Endline 90%
Users' evaluation on the developed reference materials	No data have been obtained for the baseline survey as well as for the Mid-term review	Develop a questionnairethat asks Facilitators (teaching skills book) and Head Teachers/Deputy Head Teachers (management skills book) to evaluate the degree of how these materials are useful. Set target figures developing a questionnaire.

３．プロジェクト目標及び上位目標の指標詳細分析結果

ここでは、プロジェクト目標及び上位目標の指標の達成状況の詳細な分析を行う。分析項目は次のとおり。i)州別の総合判定値のベースラインとの比較、ii)総合判定値の先行州と新規州との比較、iii)州別の観点別判定値のベースラインとの比較、iv)観点別判定値の先行州と新規州の比較、v)総合判定値と観点別判定値の比較。

（プロジェクト目標達成状況の詳細分析結果）

［授業計画能力（数学)］

ｉ．総合判定値のベースラインデータとの比較（表１参照）

表１　数学総合判定値(P)(満点 4) のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(P)	3.46	3.04	2.21	2.87	2.69	3.25	3.13	2.08	2.50	3.31	2.33	2.71	2.71*
(Sample No.)	(11)	(8)	(12)	(31)	(5)	(5)	(4)	(6)	(5)	(4)	(5)	(34)	(379)
Mid-term(P)	2.67	3.25	3.50	3.12	2.50	4.00	NA	3.38	1.67	2.25	2.88	2.75	2.91
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)	(2)	(3)	(18)	(31)
Difference	-0.79	0.21	1.29	0.26	-0.19	0.75	NA	1.30	-0.83	-1.06	0.55	0.04	

*: 全サンプルの平均値
出所：STEPS プロジェクト

数学教師の授業計画能力について、全体平均値が、ベースライン平均値より高くなっている。5州で増加し、4州で減少している。最大の増加はムチンガ州の 1.30 ポイントであり、最大の減少は西部州の－1.06 ポイントである。

ⅱ．総合判定値の先行州と新規州との比較（表１参照）

総合判定値（P）の平均値は、先行州が新規州のものより 0.37 ポイント高い。先行州と新規州のいずれの平均値も増加し、先行州での増加がより大きい。州単位で見ると、増減が混在し変化の状況は多様である。

ⅲ．観点別判定値のベースラインデータとの比較（表２参照）

表２　数学観点別判定値(P-1、P-2、P-3)(満点 2）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(P-1)	1.74	1.56	1.69	1.67	1.30	1.54	1.80	1.12	1.63	1.44	1.56	1.47	1.51*
Mid-term(P-1)	1.77	1.85	1.90	1.84	1.71	1.50	NA	1.91	1.96	1.78	1.38	1.72	1.77
Difference	0.03	0.29	0.21	0.17	0.41	-0.04	NA	0.79	0.33	0.34	-0.19	0.25	
Baseline(P-2)	1.85	1.78	1.18	1.57	1.70	1.32	1.88	1.00	1.32	1.60	1.49	1.44	1.52*
Mid-term(P-2)	1.75	1.81	2.00	1.86	1.69	1.58	NA	1.78	1.66	1.69	1.85	1.71	1.77
Difference	-0.10	0.03	0.82	0.29	-0.01	0.26	NA	0.78	0.34	0.09	0.36	0.26	
Baseline (P-3)	1.72	1.34	0.88	1.30	1.08	0.75	1.48	0.83	1.42	1.17	1.21	1.11	1.15*
Mid-term(P-3)	1.19	1.58	1.50	1.40	1.13	1.38	NA	1.01	1.46	0.94	1.25	1.22	1.30
Difference	-0.53	0.24	0.62	0.10	0.04	0.63	NA	0.18	0.04	-0.23	0.04	0.11	

注：P-1, 2, 3 のベースライン及び中間レビューのサンプル数は表１のものと同数
*: 全サンプル数 379 件の平均値
出所：STEPS プロジェクト

数学教師の授業計画能力について、3 つの観点、P-1（目標設定）、P-2（全体構成）、P-3（生徒配慮）いずれにおいても、全体平均値が、ベースライン平均値よりも増大している。10 州に対しての 3 観点での測定で、2 観点以上で判定値の減少があったのは中央州のみで、1 観点での減少が 4 州でみられた。各観点においてそれぞれ 2 州で減少があった。

ⅳ. 観点別判定値の先行州と新規州の比較（表２参照）

各観点での判定値の平均値は、いずれも先行州のものが新規州のものより大きい。先行州と新規州それぞれベースラインデータを上回り、増大の程度はほぼ同じであった。

ⅴ. 総合判定値（P）と観点別判定値（P-1、P-2、P-3）との比較（表３参照）

表３　数学総合判定値（P)と観点別判定値（P−1、P−2、P−3）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Mid-term(P)	66.8	81.3	87.5	78.1	62.5	100.0	NA	84.5	41.8	56.3	72.0	68.7	72.8
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)	(2)	(3)	(18)	
Mid-term(P-1)	88.5	92.7	95.1	92.0	85.4	75.0	NA	95.6	97.9	89.1	68.8	85.8	88.4
Mid-term(P-2)	87.5	90.6	100.0	93.0	84.7	79.2	NA	89.2	82.8	84.4	92.7	85.4	88.6
Mid-term(P-3)	59.4	79.2	75.0	70.0	56.3	68.8	NA	50.3	72.9	46.9	62.5	61.0	64.8
Average(P-1,2,3)	78.5	87.5	90.0	85.0	75.5	74.3	NA	78.3	84.5	73.4	74.7	77.4	80.6

注：P-1, 2, 3 のサンプル数は表 1 と同数
出所：STEPS プロジェクト

総合判定値（P）と観点別判定値（P-1（目標設定）、P-2（全体構成）、P-3（生徒配慮））の平均を比較すると、東部州とムチンガ州を除いた 7 州で、P が P-1、P-2、P-3 の平均より低く現れている。ムチンガ州においても、P は P-1、P-2 より低い。P は、P-1、P-2、P-3 三者の平均に比べ、州による変動が大きい。

P と P-1、P-2、P-3 それぞれの全体平均を比べると、P は、P-1 と P-2 より低く、P-3 より高い。P-1、P-2、P-3 を比べると、6 州で P-1 が最高で、他の 3 州で P-2 が最高となっている。P-3 はいずれの州でも最低である。

［授業計画能力（理科）］

ⅰ. ベースラインデータとの比較（表４参照）

表４　理科総合判定値（P）（満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(P)	2.75	1.94	2.85	2.58	2.58	1.50	3.25	2.46	1.50	3.25	2.58	2.42	2.62*
(Sample No.)	(11)	(8)	(12)	(31)	(5)	(5)	(5)	(4)	(5)	(4)	(5)	(33)	(375)
Mid-term(P)	3.00	2.42	3.75	2.92	3.00	2.00	NA	3.50	3.00	4.00	1.50	2.79	2.85
(Sample No.)	(6)	(6)	(3)	(15)	(2)	(3)		(2)	(3)	(2)	(2)	(14)	(29)
Difference	0.25	0.48	0.90	0.34	0.42	0.50	NA	1.04	1.50	0.75	-1.08	0.36	

*: 全サンプルの平均値
出所：STEPS プロジェクト

理科教師の授業計画能力について、全体平均値が、ベースライン平均値より高くなっている。8州で増加し、1 州で減少している。最大の増加はルアプラ州の 1.5 ポイントで、最大の減少は南部州の－1.08 ポイントである。

ⅱ. 先行州と新規州との比較（表４参照）

総合判定値（P）の平均値は、先行州が新規州のものより 0.13 ポイント高い。先行州と新規州のいずれの平均値も同程度増加している。新規州の中での増減の程度が多様で、増減の幅は先行州 0.65 ポイント、新規州で 2.58 ポイントである。

ⅲ. 観点別判定値のベースラインデータとの比較（表５参照）

表５　理科観点別判定値(P−1、P−2、P−3)（満点 2）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(P-1)	1.50	1.36	1.65	1.52	1.10	0.54	1.96	1.19	0.94	1.72	1.60	1.28	1.49*
Mid-term(P-1)	1.64	1.47	2.00	1.64	1.88	1.88	NA	1.91	1.83	1.63	1.00	1.71	1.68
Difference	0.14	0.11	0.35	0.12	0.78	1.34	NA	0.72	0.89	-0.10	-0.60	0.43	
Baseline(P-2)	1.58	1.42	1.47	1.50	1.42	0.39	1.90	1.19	0.88	1.70	1.42	1.26	1.48*
Mid-term(P-2)	1.88	1.50	1.79	1.71	1.58	1.38	NA	1.75	1.44	1.96	1.00	1.50	1.61
Difference	0.30	0.08	0.32	0.21	0.16	0.99	NA	0.56	0.56	0.26	-0.42	0.24	
Baseline (P-3)	1.50	1.47	1.17	1.36	0.65	0.25	1.51	1.05	0.81	1.39	1.25	0.97	1.13*
Mid-term(P-3)	1.75	1.58	1.75	1.68	1.56	0.81	NA	1.78	1.67	1.31	0.75	1.30	1.50
Difference	0.25	0.11	0.58	0.32	0.91	0.56	NA	0.73	0.86	-0.08	-0.50	0.33	

注：P-1, 2, 3 のベースライン及び中間レビューのサンプル数は表４と同数
*: 全サンプル数 375 件の平均値
出所：STEPS プロジェクト

理科教師の授業計画能力について、3 つの観点、P-1（目標設定）、P-2（全体構成）、P-3（生徒配慮）いずれにおいても、全体平均値が、ベースライン平均値よりも増大している。南部州は 3 観点すべてにおいて、西部州は 2 観点において、減少した。他の州に減少はみられなかった。

ⅳ. 観点別判定値の先行州と新規州の比較（表５参照）

各観点での判定値の平均値は、P-2 と P-3 で先行州のものが新規州のものより大きく、P-1 では新規州が大きい。先行州と新規州それぞれベースラインデータを上回り、増大の程度はほぼ同じであった。

ⅴ. 総合判定値（P）と観点別判定値（P-1、P-2、P-3）との比較（表６参照）

表６　理科総合判定値（P)と観点別判定値（P−1、P−2、P−3）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Mid-term(P)	75.0	60.5	93.8	73.0	75.0	50.0	NA	87.5	75.0	100.0	37.5	69.6	72.8
(Sample No.)	(6)	(6)	(3)	(15)	(2)	(3)		(2)	(3)	(2)	(2)	(14)	(29)
Mid-term(P-1)	81.9	73.4	100.0	82.2	93.8	93.8	NA	95.3	91.7	81.3	50.0	85.5	83.8
Mid-term(P-2)	94.0	75.0	89.6	85.5	79.2	68.8	NA	87.5	72.2	97.9	50.0	75.1	80.5
Mid-term(P-3)	87.5	78.8	87.5	84.0	78.1	40.6	NA	89.1	83.3	65.6	37.5	65.2	74.9
Average(P-1,2,3)	87.8	75.8	92.4	83.9	83.7	67.7	NA	90.6	82.4	81.6	45.8	75.3	79.7

注：P-1, 2, 3 のサンプル数は表４と同数
出所：STEPS プロジェクト

総合判定値（P）と観点別判定値〔P-1（目標設定）、P-2（全体構成）、P-3（生徒配慮）〕の平均を比較すると、コッパーベルト州と西部州を除いた 7 州で、P が P-1、P-2、P-3 の平均より低く現れている。

P と P-1、P-2、P-3 のそれぞれの全体平均を比べると、P は、P-1、P-2、P-3 のいずれより低い。P-1、P-2、P-3 を比べると、東部州と西部州で最大 53%と 32%の差があるが、他は 19%以内の差にとどまっている。6 州で P-1 が最高で、他の 3 州で P-2 が最高、1 州で P-3 が最高となっている（南部州で P-1 と P-2 がともに 50%で最高値）。

［授業実施能力（数学）］

ⅰ. 総合判定値のベースラインデータとの比較（表 7 参照）

表 7　数学総合判定値（D）（満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(D)	2.31	1.84	1.94	2.05	1.50	2.67	2.06	1.36	1.42	1.63	2.33	1.84	1.89*
(Sample No.)	(11)	(8)	(12)	(31)	(5)	(5)	(4)	(6)	(5)	(4)	(5)	(34)	(379)
Mid-term(D)	0.25	2.33	2.17	1.47	1.75	3.00	NA	2.25	2.00	0.50	1.75	1.96	1.75
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)	(2)	(3)	(18)	(31)
Difference	-2.06	0.49	0.23	-0.58	0.25	0.33	NA	0.89	0.58	-1.13	-0.58	0.12	

*: 全サンプルの平均値
出所：STEPS プロジェクト

数学教師の授業実施能力について、全体平均値が、ベースライン平均値より低くなっている。6 州で増加し、3 州で減少している。-2.06 ポイント（中央州）と-1.13 ポイント（西部州）のように、1 ポイント以上の減少を示した州が 2 州あるのに対し、増大の量はムチンガ州の 0.89 が最大である。

ⅱ. 総合判定値の先行州と新規州との比較（表 7 参照）

総合判定値（D）の平均値は、新規州が先行州のものより 0.49 ポイント高い。先行州の平均値は減少し、新規州のものは増大している。先行州の平均値の減少は、中央州のものの影響であり、他の 2 州では増大している。

ⅲ. 観点別判定値のベースラインデータとの比較（表 8 参照）

表 8　数学観点別判定値(D-1、D-2、D-3)(満点 2）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(D-1)	1.64	1.59	1.30	1.50	1.45	1.46	1.93	1.03	1.31	1.55	1.54	1.44	1.14*
Mid-term(D-1)	1.38	1.67	1.92	1.65	1.65	1.55	NA	1.72	1.40	1.36	1.54	1.54	1.59
Difference	-0.26	0.08	0.62	0.16	0.20	0.09	NA	0.69	0.09	-0.19	-0.00	0.10	
Baseline(D-2)	1.40	1.24	0.73	1.10	1.02	0.80	1.39	0.81	0.84	0.60	1.30	0.96	1.02*
Mid-term(D-2)	0.88	1.57	1.43	1.25	0.86	1.07	NA	0.99	1.43	0.75	0.79	1.02	1.12
Difference	-0.52	0.33	0.70	0.15	-0.16	0.27	NA	0.18	0.59	0.15	-0.51	0.06	
Baseline (D-3)	1.71	1.54	1.20	1.47	1.59	1.80	1.70	1.34	1.47	1.28	1.37	1.50	1.50*
Mid-term(D-3)	1.55	1.65	1.97	1.73	1.50	1.50	NA	1.68	1.53	1.50	1.88	1.60	1.66
Difference	-0.16	0.11	0.77	0.26	-0.09	-0.30	NA	0.34	0.06	0.22	0.51	0.10	

注：D-1, 2, 3 のベースライン及び中間レビューのサンプル数は表 7 のものと同数
*: 全サンプル数 379 件の平均値
出所：STEPS プロジェクト

数学教師の授業実施能力について、3 つの観点、D-1（計画実行）、D-2（主体的学習）、D-3（基本能力）いずれにおいても、全体平均値が、ベースライン平均値よりも増大している。州別では、中央州で 3 観点、北部州で 2 観点、東部州、西部州、南部州で 1 観点においての減少がみられた。

ⅳ. 観点別判定値の先行州と新規州の比較（表８参照）

各観点での判定値の平均は、いずれも先行州のものが新規州のものより大きい。3 観点すべてにおいて、先行州、新規州共に、ベースラインデータを上回っている。先行 3 州では、中央州で、3 観点すべてで減少しているものの、主に、コッパーベルト州の増大により、平均値での増大が成り立っている。

ⅴ. 総合判定値（D）と観点別判定値（D-1、D-2、D-3）との比較（表９参照）

表９　数学総合判定値（D）と観点別判定値（D-1、D-2、D-3）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Mid-term(D)	6.3	58.3	54.3	36.7	43.8	75.0	NA	56.3	50.0	12.5	43.8	49.0	72.8
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)	(2)	(3)	(18)	(31)
Mid-term(D-1)	69.0	83.3	95.8	82.6	82.5	77.4	NA	86.2	70.2	67.9	76.8	77.0	79.3
Mid-term(D-2)	44.0	78.6	71.4	62.5	42.9	53.6	NA	49.3	71.4	37.5	39.3	50.9	55.8
Mid-term(D-3)	77.5	82.5	98.3	86.7	75.0	75.0	NA	84.0	76.7	75.0	93.8	80.0	82.8
Average(D-1,2,3)	63.5	81.5	88.5	77.3	66.8	68.7	NA	73.1	72.8	60.1	69.9	69.3	72.6

注：D-1, 2, 3 のサンプル数は表 7 と同数
出所：STEPS プロジェクト

総合判定値（D）と観点別判定値（D-1（計画実行）、D-2（主体的学習）、D-3（基本能力））の平均を比較すると、9 州で、D が D-1、D-2、D-3 の平均より低く現れている。

D と D-1、D-2、D-3 のそれぞれの全体平均を比べると、D は、D-1、D-3 より低く、D-2 より高い。

D-1、D-2、D-3 を比べると、先行州、新規州共に、D-3、D-1、D-2 の順に高くなっている。5 州で D-3 が最高を示し、4 州で D-1 が最高となっている。D-2 はいずれの州でも最低である。

［授業実施能力（理科）］

ⅰ. ベースラインデータとの比較（表１０参照）

表 10　理科総合判定値(D)(満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(D)	1.96	1.31	2.15	1.85	0.97	1.92	2.36	1.65	0.75	2.29	2.33	1.74	1.80*
(Sample No.)	(11)	(9)	(12)	(32)	(5)	(5)	(5)	(4)	(5)	(4)	(5)	(33)	(375)
Mid-term(D)	2.25	1.75	3.00	2.20	3.50	1.50	NA	2.50	2.33	3.00	1.50	2.32	2.26
(Sample No.)	(6)	(6)	(3)	(15)	(2)	(3)		(2)	(3)	(2)	(2)	(14)	(29)
Difference	0.29	0.44	0.85	0.35	2.53	-0.42	NA	0.85	1.58	0.71	-0.83	0.58	

*: 全サンプルの平均値
出所：STEPS プロジェクト

理科教師の授業実施能力について、全体平均値が、ベースライン平均値より高くなっている。7 州で増加し、2 州で減少している。2.53 ポイント（北部州）と 1.58 ポイント（ルアプラ州）のよ

うに、1 ポイント以上の増大を示した州が 2 州あるに対し、減少の量は南部州の-0.83 ポイントが最大である。

ⅱ. 総合判定値の先行州と新規州との比較（表 10 参照）

総合判定値（D）の平均値は、新規州が先行州のものより 0.12 ポイント高い。先行州、新規州ともに増大している。先行州ではすべて総合判定値が増加し、新規州では増減が混在している。

ⅲ. 観点別判定値のベースラインデータとの比較（表 11 参照）

表 11　理科観点別判定値（D-1、D-2、D-3）（満点 2）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Baseline(D-1)	1.40	1.06	1.54	1.37	1.21	0.95	1.88	0.96	0.93	1.43	1.30	1.24	1.05*
Mid-term(D-1)	1.70	1.26	1.89	1.56	1.93	1.30	NA	1.80	1.29	1.77	1.32	1.53	1.55
Difference	0.30	0.20	0.35	0.20	0.72	0.35	NA	0.84	0.36	0.34	0.02	0.29	
Baseline(D-2)	1.29	1.17	1.31	1.27	0.83	0.65	1.51	0.98	0.57	1.20	0.93	0.94	1.12*
Mid-term(D-2)	1.45	1.34	1.44	1.40	1.36	1.10	NA	1.75	1.67	1.14	1.21	1.37	1.39
Difference	0.16	0.17	0.13	0.14	0.53	0.45	NA	0.77	1.10	(0.06)	0.28	0.43	
Baseline (D-3)	1.45	1.31	1.37	1.38	1.43	1.37	1.58	1.15	1.05	1.61	1.50	1.38	1.43*
Mid-term(D-3)	1.91	1.28	1.65	1.61	1.80	1.50	NA	1.70	1.40	1.65	1.55	1.58	1.59
Difference	0.46	(0.03)	0.28	0.22	0.37	0.13	NA	0.55	0.35	0.04	0.05	0.19	

注：D-1, 2, 3 のベースライン及び中間レビューのサンプル数は表 10 のものと同数
*: 全サンプル数 375 件の平均値
出所：STEPS プロジェクト

理科教師の授業実施能力について、3 つの観点、D-1（計画実行）、D-2（主体的学習）、D-3（基本能力）いずれにおいても、全体平均値が、ベースライン平均値よりも増大している。州別では、北西部州と西部州で 1 観点において減少がみられた。

ⅳ. 観点別判定値の先行州と新規州の比較（表 11 参照）

3 観点すべてにおいて、先行州の平均値が進行州のものより上回っているが、いずれも 0.30 ポイントの差である。増大の幅では、D-2（主体的学習）の平均値において、新規州が先行州より、2.9 ポイント上回っている。

ⅴ. 総合判定値（D）と観点別判定値（D-1、D-2、D-3）との比較（表 12 参照）

表 12　理科総合判定値（D）と観点別判定値（D-1、D-2、D-3）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province (District)	Central (Kabwe)	N.Western (Solwezi)	Copperbelt (Ndola)	Average	Northern (Kasama)	Eastern (Chipata)	Lusaka (Lusaka)	Muchinga (Mpika)	Luapula (Mansa)	Western (Mongu)	Southern (Livingstone)	Average	National
Mid-term(D)	56.3	43.8	75.0	55.0	87.5	37.5	NA	62.5	58.3	75.0	37.5	58.0	72.8
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)	(2)	(3)	(18)	(31)
Mid-term(D-1)	84.9	63.0	94.6	78.1	96.4	64.9	NA	89.9	64.3	88.7	66.1	76.4	77.3
Mid-term(D-2)	72.6	66.9	72.0	70.2	67.9	54.9	NA	87.5	83.3	57.1	60.7	68.7	69.5
Mid-term(D-3)	95.6	64.0	82.5	80.3	90.0	75.0	NA	85.0	70.0	82.5	77.5	78.9	79.6
Average(D-1,2,3)	84.37	64.60	83.06	76.20	84.76	64.93	NA	87.46	72.54	76.11	68.10	74.66	75.46

注：D-1, 2, 3 のサンプル数は表 10 と同数
出所：STEPS プロジェクト

総合判定値（D）と観点別判定値〔D-1（計画実行）、D-2（主体的学習）、D-3（基本能力）〕の平均を比較すると、8 州で、D が D-1、D-2、D-3 の平均より低く現れている。

D と D-1、D-2、D-3 のそれぞれの全体平均を比べると、D は、D-1、D-3 のより低く、D-2 より高い。D-1、D-2、D-3 を比べると、先行州、新規州ともに、D-3、D-1、D-2 の順に高くなっている。4 州で D-1 が最高を示し、他の 3 州で D-3、2 州で D-2 が最高を示している。

（上位目標達成状況の詳細分析結果）

［授業目標の達成度（数学）］

ⅰ. 総合判定値（L1：授業目標の達成度）のベースラインデータとの比較（表 13 参照）

表 13　総合判定値（L1）（満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L1)	2.23	2.15	2.04	2.14	1.38	2.08	1.63	1.72	1.58	1.81	2.17	1.77	1.92*
(Sample No.)	(11)	(8)	(12)	(31)	(5)	(5)	(4)	(6)	(5)	(4)	(5)	(34)	(379)
Mid-term(L1)	0.67	2.67	2.33	1.77	1.75	3.00	NA	2.17	2.00	NA	2.00	2.17	1.99
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)		(3)	(16)	(29)
Difference	-1.56	0.52	0.29	-0.37	0.37	0.92	NA	0.45	0.42	NA	-0.17	0.40	

*: 全サンプルの平均値
出所：STEPS プロジェクト

授業目標の達成度についての総合判定値の全体の平均は、ベースライン平均値より高くなっている。1 ポイント以上の増大が見られない中で、中央州の 1.56 ポイントの減少が目立つ。他に、南部州で、0.17 ポイントの減少がみられる。

ⅱ. 総合判定値の先行州と新規州との比較（表 13 参照）

総合判定値 L1 の平均値は、先行州で減少し、新規州で増大した。その結果、新規州の平均値が先行州のものを上回った。

ⅲ. 観点別判定値（L-1: 学習達成の程度）のベースラインデータとの比較（表 14 参照）

表 14　観点別判定値（L-1）（満点２）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L-1)	1.63	1.61	1.19	1.45	1.15	1.39	1.60	0.87	1.33	1.23	1.36	1.26	1.26*
Mid-term(L-1)	0.83	1.67	1.83	1.41	1.28	1.33	NA	1.49	1.61	1.00	1.42	1.39	1.49
Difference	-0.80	0.06	0.64	-0.05	0.13	-0.06	NA	0.62	0.28	-0.23	0.06	0.13	

*: 全サンプルの平均値、中間レビューの西部州の L-1 のサンプル数は 2。他のサンプル数は、表 13 と同じ。
出所：STEPS プロジェクト

全体の平均値は、ベースラインデータを上回った。先行州で、平均値が減少したが、その要因は、中央州 1 州の 0.8 ポイントの減少である。反対に、コッパーベルト州は、全州で最高の 0.64 ポイントの増大をみせている。新規州では、2 州で減少がみられるものの、6 州の平均値として増大した。

ⅳ. 観点別判定値（L1）の先行州と新規州の比較（表 14 参照）

学習達成の程度について、平均値が先行州で減少し、新規州で増大した。その結果、先行州と新規州の平均値がほぼ同レベルとなった。

ⅴ. 総合的判定値（L1）と観点別判定値（L-1）との比較

表 15　数学総合判定値（L1）と観点別判定値（L-1）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Mid-term(L1)	16.8	66.8	58.3	44.3	43.8	75.0	NA	54.3	50.0	NA	50.0	54.3	49.8
Mid-term(L-1)	41.5	83.5	91.5	70.4	64.0	66.5	NA	74.5	80.5	50.0	71.0	69.4	74.7
(L-1) - (L1)	24.8	16.8	33.3	26.2	20.3	-8.5	NA	20.3	30.5	NA	21.0	15.1	24.9

サンプル数は、表 13 と同じ。
出所：STEPS プロジェクト

表 15 は、生徒の主体的学習の程度について、ルーブリックを活用した総合判定（L1）（満点 4）と、観点別判定 L-1（学習達成の程度）からの判定値（満点 2）を 100%に換算して示したものである。以降、表 18、表 21、表 24 において、同様の換算をしている。

東部州を除いた 7 州で、観点別評価により高い評点が与えられている。全体の平均で、約 25%の差が出ている。最大の差が出たのは、コッパーベルト州で、33%であった。

［授業目標の達成度（理科）］

ⅰ. 総合判定値（L1）のベースラインデータとの比較（表 16 参照）

表 16　総合判定値（L1）（満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L1)	1.79	1.33	2.25	1.83	1.11	1.42	2.25	1.71	1.00	2.10	2.17	1.67	1.77*
(Sample No.)	(11)	(9)	(12)	(32)	(5)	(5)	(5)	(4)	(5)	(4)	(5)	(33)	(375)
Mid-term(L1)	2.25	1.78	2.50	2.11	3.00	1.50	NA	2.50	2.00	3.00	1.75	2.21	2.16
(Sample No.)	(6)	(6)	(3)	(15)	(2)	(3)		(2)	(3)	(2)	(2)	(14)	(29)
Difference	0.46	0.45	0.25	0.28	1.89	0.08	NA	0.79	1.00	0.90	-0.42	0.55	

*: 全サンプルの平均値
出所：STEPS プロジェクト

授業目標の達成度についての総合判定値の全体の平均は、ベースライン値より増大している。州単位では、1 州だけ減少した南部州を除いて、残り 8 州で増加している。

ⅱ. 総合判定値の先行州と新規州との比較（表 16 参照）

総合判定の平均値は、ベースライン値は、先行州が高かったものの、新規州の増大幅が大きく、中間レビューでは新規州が、0.1 ポイントだけ先行州より高い。

ⅲ. 観点別判定値（L-1：学習達成の程度）のベースラインデータとの比較（表 17 参照）

表 17　観点別判定値（L-1）（満点 2）のベースラインと中間レビューとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L-1)	1.63	1.61	1.19	1.45	1.15	1.39	1.60	0.87	1.33	1.23	1.36	1.26	1.26*
Mid-term(L-1)	0.83	1.67	1.83	1.41	1.28	1.33	NA	1.49	1.61	1.00	1.42	1.39	1.49
Difference	-0.80	0.06	0.64	-0.05	0.13	-0.06	NA	0.62	0.28	-0.23	0.06	0.13	

*: 全サンプルの平均値、中間レビューの西部州の L-1 のサンプル数は 2。他のサンプル数は、表 16 と同じ。
出所：STEPS プロジェクト

理科授業での生徒の学習達成の程度について、判定値の平均が、ベースラインデータの平均値より上回った。州別では、中央州、東部州、西部州で減少がみられるが、それ以外は増加している。

ⅳ. 観点別判定値の先行州と新規州の比較（表 17 参照）

学習達成の程度について、新規州で平均値が増大し、先行州で減少した。その結果、新規州の判定値の平均が、先行州と新規州でほぼ同等となった。

ⅴ. 総合的判定値（L1）と観点別判定値（L-1）との比較

表 18　数学総合判定値（L1）と観点別判定値（L-1）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Mid-term(L1)	56.3	44.5	62.5	52.8	75.0	37.5	NA	62.5	50.0	75.0	43.8	55.4	54.0
Mid-term(L-1)	72.0	55.5	91.5	69.3	75.0	75.0	NA	92.5	50.0	91.5	41.5	75.4	72.2
(L-1) - (L1)	15.8	11.0	29.0	16.5	0.0	37.5	NA	30.0	0.0	16.5	-2.3	20.0	18.2

サンプル数は、表 16 と同じ。
出所：STEPS プロジェクト

6 州で、観点別判定値（L-1）が、総合判定値（L1）よりも高い値を出している。北部州とルアプラ州では同値となり、南部州では、総合判定値がより高く出ている。全体平均では、観点別判定値が、18 ポイント高い。

［主体的学習の程度（数学)］

ⅰ. 総合判定値（L2）のベースラインデータとの比較（表 19 対応）

表 19　総合判定値（L2）（満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L2)	2.23	2.17	1.83	2.06	1.32	1.83	1.63	1.17	1.58	1.69	2.25	1.62	1.81*
(Sample No.)	(11)	(8)	(12)	(31)	(5)	(5)	(4)	(6)	(5)	(4)	(5)	(34)	(379)
Mid-term(L2)	0.25	2.25	2.50	1.58	1.50	3.00	NA	2.06	1.67	NA	1.88	2.00	1.81
(Sample No.)	(5)	(3)	(5)	(13)	(3)	(3)		(3)	(4)		(3)	(16)	(29)
Difference	-1.98	0.08	0.67	-0.48	0.18	1.17	NA	0.89	0.09	NA	-0.37	0.38	

*: 全サンプルの平均値
出所：STEPS プロジェクト

数学授業における主体的学習の程度について、総合判定値全体の平均は、ベースライン平均値と同値となった。東部州で 1.17 ポイントの増大があるが、中央州で 1.98 ポイント減少した。州ごとの増減の様子はさまざまで、結果として全体の平均値に変化がみられなかった。

ii. 総合判定値（L2）の先行州と新規州との比較（表 19 参照）

総合判定値（L2）の平均値は、ベースラインデータでは、先行州が上回っていたが、中間レビュー調査時に、先行州の減少と、新規州の増大が同時に起こり、その結果、進行州の値が上回った。先行州の平均値の減少の要因は中央州の 1.96 ポイントの比較的大きな単独の減少である。

iii. 観点別判定値（L-2、L-3）のベースラインデータとの比較（表 20 参照）

表 20　観点別判定値（L-2、L-3）（満点 2）のベースラインと中間レビューとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L-2)	1.44	1.44	1.13	1.32	0.92	1.05	1.19	0.92	1.27	0.99	1.37	1.10	1.14*
Mid-term(L-2)	0.80	1.52	1.77	1.34	1.27	1.20	NA	1.38	1.50	0.85	1.50	1.32	1.33
Difference	-0.64	0.08	0.64	0.02	0.35	0.15	NA	0.46	0.23	-0.14	0.13	0.22	
Baseline(L-3)	1.38	1.30	0.58	1.05	0.78	0.25	1.13	0.50	1.17	0.67	1.06	0.78	0.86*
Mid-term(L-3)	0.92	1.58	1.00	1.10	0.56	0.83	NA	0.63	1.61	0.67	0.67	0.88	0.97
Difference	-0.46	0.28	0.42	0.05	-0.22	0.58	NA	0.13	0.44	0.00	-0.39	0.10	

*: 全サンプルの平均値、他のサンプル数は、表 19 と同じ。
出所：STEPS プロジェクト

生徒の数学授業における、2 つの観点、L-2（授業の学習の質）と、L-3（生徒の作業能力）での学習の観察では、L-2、L-3 ともに平均値で、ベースラインデータより増大がみられた。L-2 についてより、平均値の増大がみられ、7 州で増大した。L-3 では、6 州が増大した。

iv. 観点別判定値の先行州と新規州の比較（表 20 参照）

L-2（数学授業の学習の質）と、L-3（生徒の作業能力）の判定値について、先行州、新規州ともに平均値を増大させたが、新規州が平均値でより大きな増大を示した。判定値の平均では、L-2 ではほぼ同じ値となり、L-3 では、依然として先行州の方が 0.22 ポイント高い。先行州では、中央州のみ、L-2 と L-3 で減少を示した。

v. 総合判定値 L2 と観点別判定値 L-2、L-3 との比較（表 21 参照）

表 21　総合判定値（L2）と観点別判定値（L-2、L-3）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Mid-term(L2)	6.3	56.3	62.5	39.4	37.5	75.0	NA	51.5	41.8	NA	47.0	50.0	45.3
Mid-term(L-2)	40.0	76.0	88.5	67.0	63.5	60.0	NA	69.0	75.0	42.5	75.0	66.0	66.4
Mid-term(L-3)	46.0	79.0	50.0	55.2	28.0	41.5	NA	31.5	80.5	33.5	33.5	44.0	48.7

全体の平均では、総合判定値（L2）より、観点別判定値（L-2, L-3）に高い評定が出ている。L-3 の平均値は、新規州でやや低めである。中央州で L2 が 6.3 ポイントと極端に低いのに対し、L-2 と L-3 が、ほぼ 6 倍の値となっている。

［主体的学習の程度（理科）］

ⅰ. 総合判定値（L2）のベースラインデータとの比較（表 22 参照）

表 22　総合判定値（L2）（満点 4）のベースラインデータと中間レビューデータとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L2)	1.54	1.06	1.90	1.54	1.11	1.42	2.25	1.47	1.00	1.77	2.17	1.60	1.62*
(Sample No.)	(11)	(9)	(12)	(32)	(5)	(5)	(5)	(4)	(5)	(4)	(5)	(33)	(375)
Mid-term(L2)	1.58	1.29	2.50	1.65	3.00	1.50	NA	2.50	2.33	2.00	1.50	2.11	1.87
(Sample No.)	(6)	(6)	(3)	(15)	(2)	(3)		(2)	(3)	(2)	(2)	(14)	(29)
Difference	0.04	0.23	0.60	0.11	1.89	0.08	NA	1.03	1.33	0.23	-0.67	0.51	

*: 全サンプルの平均値
出所：STEPS プロジェクト

理科授業における主体的学習の程度の総合評定において、総合判定値（L2）の平均は、ベースラインの平均値を上回った。州別でみると、南部州においてのみ、判定値の減少が起きているが、他州では増大を示している。

ⅱ. 総合判定値（L2）の先行州と新規州との比較（表 22 参照）

総合判定値（L2）の平均値は、ベースラインデータでは、先行州と新規州ではほぼ同程度であったが、新規州での増大がより大きく、中間レビューでは、新規州が 0.46 ポイント上回った。新規州では、北部州での 1.89 ポイントをはじめ、3 州が 1 ポイント以上の増大を示した。

ⅲ. 観点別判定値（L-2、L-3）のベースラインデータとの比較（表 23 参照）

表 23　観点別判定値（L-2、L-3）（満点 2）のベースラインと中間レビューとの比較及び先行州と新規州との比較

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Baseline(L-2)	1.13	0.70	1.12	1.01	0.83	0.63	1.67	0.82	0.55	0.90	0.93	0.91	1.01*
Mid-term(L-2)	1.27	0.91	1.50	1.17	1.10	1.20	NA	1.75	1.27	0.95	0.95	1.21	1.19
Difference	0.14	0.21	0.38	0.17	0.27	0.57	NA	0.93	0.72	0.05	0.02	0.30	
Baseline(L-3)	1.15	1.08	1.10	1.11	0.25	0.08	1.49	0.76	0.67	1.18	1.03	0.77	0.91*
Mid-term(L-3)	1.74	1.17	1.92	1.55	1.17	1.17	NA	1.79	1.44	1.17	0.50	1.22	1.39
Difference	0.59	0.09	0.82	0.44	0.92	1.09	NA	1.03	0.77	-0.01	-0.53	0.45	

*: 全サンプルの平均値、サンプル数は表 22 と同じ。
出所：STEPS プロジェクト

生徒の理科授業における、2 つの観点、L-2（理科授業の学習の質）と、L-3（生徒の作業能力）での学習の観察では、L-2、L-3 ともに平均値で、ベースラインデータより高い値が得られた。L-3 についてのみ、南部州と西部州で減少がみられた。L-3 では、1 ポイント以上の増加が東部州とムチンガ州にみられたが、L-2 では、1 ポイント以上の増加はみられなかった。

ⅳ. 観点別判定値の先行州と新規州の比較（表 23 参照）

L-2 の判定値の平均については、先行州と新規州でほぼ同じ値だが、L-3 に関しては先行州が 0.33 ポイント高い。先行州、新規州ともに、L-2 よりも L-3 での増大が大きい。

ｖ. 総合判定値（L2）と観点別判定値（L-2、L-3）との比較（表 24 参照）

表 24　総合判定値（L2）と観点別判定値（L−2、L−3）との比較（100%表示）

	Mentor Provinces				New Provinces								
Province	Central	N.Western	Copperbelt	Average	Northern	Eastern	Lusaka	Muchinga	Luapula	Western	Southern	Average	National
(District)	(Kabwe)	(Solwezi)	(Ndola)		(Kasama)	(Chipata)	(Lusaka)	(Mpika)	(Mansa)	(Mongu)	(Livingstone)		
Mid-term(L2)	39.5	32.3	62.5	41.2	75.0	37.5	NA	62.5	58.3	50.0	37.5	52.7	46.7
Mid-term(L-2)	63.5	45.5	75.0	58.6	55.0	60.0	NA	87.5	63.5	47.5	47.5	62.3	60.4
Mid-term(L-3)	87.0	58.5	96.0	77.4	58.5	58.5	NA	89.5	72.0	58.5	25.0	59.5	68.8

*: 全サンプルの平均値、サンプル数は表 22 と同じ。
出所：STEPS プロジェクト

全体の平均では、総合判定値（L2）より、観点別判定値（L-2, L-3）に高い値が出ている。L-2 と L-3 の平均値の差が、先行州で 18.8 ポイントと大きく、新規州では 2.8 ポイントと小さい。L-3 について、新規州ではムチンガ州の 89.5 ポイントから南部州の 25.0 ポイントまでばらつきが大きい。

４．中間レビュー結果を踏まえて、PDM 改訂のため署名されたミニッツ

MINUTES OF MEETINGS
ON
STRENGTHENING TEACHERS' PERFORMANCE AND SKILLS THROUGH SCHOOL BASED CONTINUING PROFESSIONAL DEVELOPMENT PROJECT
IN
THE REPUBLIC OF ZAMBIA
AGREED UPON BETWEEN
MINISTRY OF EDUCATION, SCIENCE, VOCATIONAL TRAINING AND EARLY EDUCATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Ministry of Education, Science, Vocational Training and Early Education in the Republic of Zambia and Japan International Cooperation Agency hereby agree upon this ***Minutes of Meetings***.

All other clauses remain as in the original ***Record of Discussions*** signed on 13th September 2011, and ***Addendum*** signed on 18th September 2012, between the Ministry of Education, Science, Vocational Training and Early Education in the Republic of Zambia and Japan International Cooperation Agency.

Lusaka, 30th June 2014

Patrick Nkanza (Dr.)
Permanent Secretary
Ministry of Education, Science,
Vocational Training and Early Education
The Republic of Zambia

Yoshihide Teranishi (Mr.)
Resident Representative
Japan International Cooperation Agency
Zambia Office
Japan

1. Project Site(s) and Beneficiaries

The number of target district is seventy-six (76) out of hundred-three (103) districts in all ten provinces as shown below.

Province	Target Districts	Total Districts
Central	11	11
Copperbelt	10	10
North-western	9	9
Eastern	5	9
Luapula	9	11
Lusaka	7	8
Northern	4	9
Muchinga	7	7
Southern	7	13
Western	7	16
Total	76	103

2. Amendment of Project Design Matrix (PDM)

In accordance with the Mid-term review and the Minutes of Meetings signed on 11th March 2014, the previous version of PDM changes to revised PDM as shown in Annex I and II respectively.

Annex:

I: Previous version of PDM

II: Revised PDM

Annex Ⅰ: Project Design Matrix
Name of the Project: Strengthening Teachers' Performance and Skills through School Based Continuing Professional Development (STEPS)
Executing Bodies: Ministry of Education, Science, Vocational Training & Early Education and JICA
Target Area: All ten (10) Provinces in Zambia (63 selected districts out of 87 districts)
Target Group: 1) Teachers teaching science and mathematics at Grade 8-12 in all provinces
2) Grade 1-7 teachers in three provinces (Central, Copperbelt, and North-western)

Duration of the Project: the date of the first assignment of a JICA Expert - 31st Dec. 2015
Version No.: PDM Ver.1
Date: 18th September 2012

Narrative Summary	Objectively verifiable Indicators	Means of Verification	Important Assumptions
Super Goal Quality of science and mathematics education is improved.	i. Scores in national assessment (Grade 5 Numeracy, Grade 9 Science & Mathematics) ii. Examination pass rate in Grade 9 and Grade 12 iii. International comparative study (SACMEQ)	i. National Assessment Survey Report published by Ministry of Education ii. Examination Results published by Zambia's Examination Council iii. SACMEQ result (if available)	
Overall Goal Students' learning process in science and mathematics is improved.	i. Result of lesson observation (Science and Mathematics) (students' activities) ii. Students' perception towards their learning	Baseline and Endline Survey Report i. Results of lesson observations ii. Student's questionnaires	Learning environment is not adversely deteriorated. Learning time of students is secured. Head teachers ensure that students are learning.
Project Purpose Teaching skills are enhanced under School-based Continuing Professional Development (SBCPD).	i. Result of lesson observation (Science and Mathematics) (demonstration of teaching skills) ii. Self-evaluation of teachers in teaching skills iii. Students' evaluation of teaching	Baseline and Endline Survey Report i. Results of lesson observations ii. Self-evaluation of teachers iii. Evaluation by Students	Teachers continuously apply improved teaching skills to teaching. Trained teachers remain in school system.
Outputs 1. SBCPD is strengthened through Lesson Study.	i. % of schools implementing Lesson Study (target figure: 70% in all target grades) ii. Quality of Lesson Study verified through a prepared check list	i.Progress reports submitted by PEST ii. Baseline and Endline Survey Report	SBCPD is continuously implemented. The motivation of teachers and all related stakeholders in participating SBCPD is maintained. Head teachers support SBCPD. Facilitators continue to offer technical support to lesson study not only in their own schools but also in assigned schools.
2. Capacity of resource persons for implementing SBCPD is enhanced.	i. Number of resource persons (stakeholders and facilitators) trained in lesson study (target figure will be determined later) ii. Self-evaluation of resource persons on their performance iii. Evaluation of resource persons by beneficiaries	i.Progress reports submitted by PEST (List of trained facilitators and stakeholders) ii. Self-evaluation of resource persons iii. Evaluation by beneficiaries	
3. Reference materials for implementing SBCPD are developed.	i. Availability of developed reference materials in schools (Skills books, Journals, Guidelines, etc.) ii.Users' (teachers') evaluation on the developed reference materials	i. Reference Materials ii. Result of users' evaluation	
Activities **Preparation and Orientation Stage** 1-1 Prepare materials for induction WS 1-2 Conduct induction WS for PESTs and DESTs on Lesson Study 1-3 Identify facilitators 1-4 Orient the PEST task team in conducting Baseline Survey 1-5 Train facilitators/DESTs in conducting Baseline Survey 1-6 Conduct necessary surveys for project evaluation 1-7 Mentor six provinces by National Core Technical Team **Implementation Stage** 1-8 Plan Stakeholders workshop 1-9 Conduct Stakeholders workshop 1-10 Implement Lesson Study in schools 1-11 Monitor implementation of Lesson Study 2-1 Conduct Facilitators WS 2-2 Conduct Stakeholders WS 2-3 Provide technical support to Lesson Study activities at school level 2-4 Conduct International Technical Workshop 2-5 Conduct International Technical Exchange 2-6 Conduct local technical exchange visits between provinces 3-1 Revise the Teaching Skills book 3-2 Revise the Management skills book 3-3 Produce of Lesson Study journals 3-4 Print Teaching, management skills books, guideline and journals 3-5 Distribute Teaching, management skills books, guideline and journals 3-6 Organise a contest on good practices of Lesson Study for schools 3-7 Document all good practices in journals 3-8 Revise the implementation guideline	**Input from Zambian Government** • **Human resource** i NEST, National Core Technical Team, PEST and DEST members in all nine (9) provinces ii College/University lecturers iii NSC staff iv Trained resource persons (facilitators and stakeholders) through SMASTE Phase I and II • **Materials** i. Offices and other buildings used for activities under the project ii. Office Equipment iii. Vehicles and fuel iv. Teaching/learning materials used for Lesson Study • **Finances** i. Funds for implementation of the Lesson Study activities, including Stakeholders and Facilitators Workshops ii. Allowances for travel of local staff for project activities **Input from JICA** • **Human resource** i. Three (3) long term experts - Chief advisor / Management of Lesson Study, Science Education - Management of Lesson Study, Mathematics Education - Coordination and Monitoring of Lesson Study Activities ii. Short term experts when need arises in relation to the project activities. iii. Local technical advisor - Administration and Management of SBCPD • **Training** i. Provide opportunities for overseas training and conferences for Zambian counterparts and core resource persons in relation to the project activities. • **Materials** i. Office equipment (computers, printers, LCD projectors, video cameras,etc.) used for project activities ii. Vehicles used for monitoring the project activities iii. Reference materials for teaching and learning science and mathematics • **Finance** i. Local expenses and other necessary allowances for JICA experts	• There is consistency of core officers. **Preconditions** • Zambian Government policy for strengthening and implementing CPD activities of teachers does not change adversely. • There will be political will. • Budget allocation at national, provincial and district levels is adequate and timely for SBCPD activities.

Annex Ⅱ : Project Design Matrix
Name of the Project: Strengthening Teachers' Performance and Skills through School Based Continuing Professional Development (STEPS)
Executing Bodies: Ministry of Education, Science, Vocational Training & Early Education and JICA
Target Area: All ten (10) Provinces in Zambia (76 selected districts out of 103 districts)
Target Group: 1) Teachers teaching science and mathematics at Grade 8-12 in all provinces
2) Grade 1-7 teachers in three provinces (Central, Copperbelt, and North-western)

Duration of the Project: the date of the first assignment of a JICA Expert - 31st Dec. 2015
Version No.: PDM Ver.2
Date: 30th June 2014

Narrative Summary	Objectively verifiable Indicators	Means of Verification	Important Assumptions
Super Goal Quality of science and mathematics education is improved.	i. Scores in national assessment (Grade 5 Numeracy, Grade 9 Science & Mathematics) ii. Examination pass rate in Grade 9 and Grade 12 iii. International comparative study (SACMEQ)	i. National Assessment Survey Report published by Ministry of Education ii. Examination Results published by Zambia's Examination Council iii. SACMEQ result (if available)	
Overall Goal Students' learning process in science and mathematics is improved.	i. Result of lesson observation (Science and Mathematics) (students' activities) For the 3 Mentor Provinces: L2 (1.9 at Baseline to be 2.2 at Endline), L-2 (1.16 at Baseline to be 1.4 at Endline). For the 7 New Provinces: L2 (1.6 at Baseline to be 1.8 at Endline), L-2 (1.04 at Baseline to be 1.2 at Endline) ii. Students' perception towards their learning For the 3 Mentor provinces: L-2 (1.58 at Baseline to be 1.7 at Endline), L-3 (1.48 at Baseline to be 1.6 at Endline). For the 7 New provinces: L-2 (1.58 at Baseline to be 1.7 at Endline), L-3 (1.45 at Baseline to be 1.6 at Endline)	Baseline and Endline Survey Report especially on; i. "Learning (L)" part of Lesson Observation format for Baseline & Endline ii. L-2 and L-3 parts on Questionnaire to Students for Baseline & Endline	Learning environment is not adversely deteriorated. Learning time of students is secured. Head teachers ensure that students are learning.
Project Purpose Teaching skills are enhanced under School-based Continuing Professional Development (SBCPD).	i. Result of lesson observation (Science and Mathematics) (demonstration of teaching skills) For the 3 Mentor provinces: P-3 (1.27 at Baseline to be 1.5 at Endline), D-2 (1.15 at Baseline to be 1.3 at Endline), For the 7 New provinces: P-3 (1.09 at Baseline to be 1.27 at Endline), D-2 (1.03 at Baseline to be 1.15 at Endline) ii. Self-evaluation of teachers in teaching skills (Target: positive average figure on Self-evaluation tool by teachers) iii. Students' evaluation of teaching: L-1 (1.49 at Baseline to be 1.55 at Endline)	Baseline and Endline Survey Report especially on; i. "Planning (P)" and "Delivering (D)" parts of Lesson Observation format for Baseline & Endline ii. Questionnaire answered by teachers observed in Baseline & Endline iii. L1 part on Questionnaire to Students for Baseline & Endline	Teachers continuously apply improved teaching skills to teaching. Trained teachers remain in school system.
Outputs 1. SBCPD is strengthened through Lesson Study.	i. % of schools implementing Lesson Study (Minimum target figure: 90% in 3 Mentor provinces, 50% in 7 New provinces) ii. Quality of Lesson Study verified through a prepared check list (Minimum target average on current check list: 1.8)	i.Progress reports submitted by PEST, Baseline and Endline Survey Reports ii. Average score on Lesson Study check list	SBCPD is continuously implemented. The motivation of teachers and all related stakeholders in participating SBCPD is maintained. Head teachers support SBCPD. Facilitators continue to offer technical support to lesson study not only in their own schools but also in assigned schools.
2. Capacity of resource persons for implementing SBCPD is enhanced.	i. Number of resource persons (who participated in JICA training programmes abroad) (Minimum target number: Japan 76, Kenya 12, Malaysia 100 persons) *Reference: Number of stakeholders and Lesson Study Facilitators participated in in-country trainings: (Minimum target number: Stakeholders 3,200, Facilitators 750 persons) ii. Self-evaluation of resource persons on their performance (Target: Positive average figure on Self-evaluation tool) iii. Evaluation of resource persons by beneficiaries (who are directly trained by resource persons at workshops and lesson study activity) (Target: Positive average figure on resource person evaluation tool)	i.Progress reports submitted by PEST, Records at in-service unit (List of trained persons who participated in JICA Training Programmes abroad) ii. Self-evaluation questionnaire answered by resource persons (who participated in JICA Training Programmes abroad) iii. Resource person-evaluation questionnaire answered by people trained by them	
3. Reference materials for implementing SBCPD are developed.	i. Number of developed reference materials (Skills books, Journals, Guidelines, etc.) Minimum Target: Teaching skills book - 1 booklet (15,000 copies), Management skills book - 1 booklet (7,500 copies), Journals - 4 volumes (3,000 copies each), Kyozai Kenkyu booklet - 1 booklet (7,500 copies) ii.Users' (teachers') evaluation on the developed reference materials (Minimum target average figure on Users' evaluation tool: 3.0)	i. Existing Reference Materials, Records at in-service unit ii.Users' evaluation questionnaire on reference materials	

Activities	Inputs	Important Assumptions
Preparation and Orientation Stage 1-1 Prepare materials for induction WS 1-2 Conduct induction WS for PESTs and DESTs on Lesson Study Identify facilitators Orient the PEST task team in conducting Baseline Survey 1-5 Train facilitators/DESTs in conducting Baseline Survey 1-6 Conduct necessary surveys for project evaluation 1-7 Mentor six provinces by National Core Technical Team **Implementation Stage** 1-8 Plan Stakeholders workshop 1-9 Conduct Stakeholders workshop 1-10 Implement Lesson Study in schools 1-11 Monitor implementation of Lesson Study 2-1 Conduct Facilitators WS 2-2 Conduct Stakeholders WS 2-3 Provide technical support to Lesson Study activities at school level 2-4 Conduct International Technical Workshop 2-5 Conduct International Technical Exchange 2-6 Conduct local technical exchange visits between provinces 3-1 Revise the Teaching Skills book 3-2 Revise the Management skills book 3-3 Produce of Lesson Study journals 3-4 Print Teaching, management skills books, guideline and journals 3-5 Distribute Teaching, management skills books, guideline and journals 3-6 Organise a contest on good practices of Lesson Study for schools 3-7 Document all good practices in journals 3-8 Revise the implementation guideline	**Input from Zambian Government** **• Human resource** i NEST, National Core Technical Team, PEST and DEST members in all nine (9) provinces ii College/University lecturers iii NSC staff iv Trained resource persons (facilitators and stakeholders) through SMASTE Phase I and II **• Materials** i. Offices and other buildings used for activities under the project ii. Office Equipment iii. Vehicles and fuel iv. Teaching/learning materials used for Lesson Study **• Finances** i. Funds for implementation of the Lesson Study activities, including Stakeholders and Facilitators Workshops ii. Allowances for travel of local staff for project activities **Input from JICA** **• Human resource** i. Three (3) long term experts - Chief advisor / Management of Lesson Study, Science Education - Management of Lesson Study, Mathematics Education - Coordination and Monitoring of Lesson Study Activities ii. Short term experts when need arises in relation to the project activities iii. Local technical advisor - Administration and Management of SBCPD **• Training** i. Provide opportunities for overseas training and conferences for Zambian counterparts and core resource persons in relation to the project activities. **• Materials** i. Office equipment (computers, printers, LCD projectors, video cameras,etc.) used for project activities ii. Vehicles used for monitoring the project activities iii. Reference materials for teaching and learning science and mathematics **• Finance** i. Local expenses and other necessary allowances for JICA experts	• There is consistency of core officers. **Preconditions** • Zambian Government policy for strengthening and implementing CPD activities of teachers does not change adversely. • There will be political will. • Budget allocation at national, provincial and district levels is adequate and timely for SBCPD activities.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